DOCUMENT RESUME

ED 171 959 CE 021 546

AUTHOR	Anton, Thomas J.; And Others
TITLE	The Planning Papers for the Vocational Education Study. Vocational Education Study Publication No. 1.
INSTITUTION	National Inst. of Education (DHEW), Washington, D.C.
PUB DATE	Apr 79
CONTRACT	400-77-0076
NOTE	342p.; For a related document see CE 021 547
AVAILABLE FROM	Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402
EDRS PRICE	MF01/PC14 Plus Postage.
DESCRIPTORS	*Data Bases; Educational Planning; *Educational Policy; Educational Research; *Federal Aid; *Federal Legislation; Federal Programs; Governance; Policy Formation; *Program Evaluation; Rural Education; Sex Fairness; Special Education; *Vocational Education
IDENTIFIERS	Vocational Education Amendments 1976

ABSTRACT

Fourteen planning papers commissioned by the National Institute of Education in preparation for a study of vocational education are presented. The papers are organized into four sections. Section one deals with selected features of federal grant-in-aid programs and contains these papers: "On Implementing the Vocational Amendments of 1976", "Distribution and Allocation of Funding for Vocational Education", "Federal and State Governance of Vocational Education", and "Research Issues for Vocational Education: Compliance and Enforcement of Federal Laws". Two papers on quantitative data sources are presented in section two: "The Vocational Education Data Base" and "Effects of Vocational Education Programs: Research Findings and Issues." The third section deals with issues in program evaluation. The papers are "The Phoenix of Vocational Education: Implications for Evaluation", "The Effects of National Policy on Vocational Education Evaluation", and "Vocational Education: Education or Short-Run Training Program?". The last section treats selected aspects of vocational education policy. Papers are "The Role of Vocational Education in the Nation's Employment and Training Programs", "Vocational Education in Rural America: Current Problems and Prospects", "Race and Sex Compliance Issues in Vocational Education", "Vocational Education for Special-Needs Students" and "Vocational Education as a Strategy for Eliminating Poverty." (JH)

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ED171959

THE PLANNING PAPERS
FOR
THE VOCATIONAL EDUCATION STUDY

April, 1979

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CE 021 546

Vocational Education Study Publication: No. 1

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

These papers were prepared under Contract #400-77-0076 from the National Institute of Education, U.S. Department of Health, Education and Welfare. The opinions expressed in these papers do not necessarily reflect the position or policy of the Vocational Education Study Staff, the National Institute of Education, or the U.S. Department of Health, Education and Welfare.

FOREWORD

It is the intention of the Vocational Education Study Project to publish papers, accounts of inquiries, and the results of selected research projects emerging from its work. These publications will be in addition to the Interim and Final reports which the Education Amendments of 1976 (P.L. 94-482) require the National Institute of Education to transmit to the President and the Congress on its study and evaluation of vocational education.

These publications will have been judged to contain information and viewpoints of utility to a wide range of legislators, officials, administrators, and practitioners concerned with vocational education policies and programs and their implementation and consequences. To the extent that they do, in fact, prove useful, they may serve to repay in small part the large debt owed by the Study Project to the vocational education community for its sympathetic understanding of the purposes and substance of the inquiry and for the assistance its members have given the National Institute of Education in facilitating its conduct.

Henry David
Study Project Director

Gerry Hendrickson
Study Project Assistant Director

PREFACE

In the Education Amendments of 1976 (P.L. 94-482) the National Institute of Education was given the charge of conducting a "thorough evaluation and study" of vocational education and related programs in the United States. In particular, the Act mandated that the undertaking include:

> A study of the distribution of vocational education funds in terms of services, occupations, target populations, enrollments, and educational and governmental levels and what such distribution should be in order to meet the greatest human resources needs for the next ten years;
>
> An examination of how to achieve compliance with, and enforcement of the provisions of applicable laws of the United States;
>
> An analysis of the means of assessing program quality and effectiveness; and
>
> A review and evaluation of programs funded under the "Consumer and Homemaking Education" provisions of the law.

In preparing for the performance of these tasks and developing A Plan for the Study of Vocational Education, transmitted to the Congress on December 30, 1977, the Institute sought advice from a variety of persons and interest groups. Several approaches for securing counsel, guidance, and information were utilized: site visits to vocational education facilities in various states, meetings with informed persons, and the commissioning of a series of papers treating different aspects in the mandated study.

This volume contains 14 of the 21 papers commissioned by the National Institute of Education through the Center for Educational Research at Stanford University. A separate group of papers dealing with consumer and homemaking education was also commissioned. Three of these are being published in a companion volume, The Planning Papers on Consumer and Homemaking Education Programs.

The planning papers speak from a variety of perspectives on a diverse set of topics relating to vocational education. Yet taken as a whole they draw attention to several characteristics of the field. Vocational education is a decentralized system with great differentiation in the type and quality of local and state programming. Moreover, the term vocational education means many things to many different persons and interest groups. Indeed, the authors in this volume express varying views of what vocational education should be. These characteristics are made more complex by the fact that, relatively speaking, it is the next to oldest Federal grant-in-aid program to education.

In a commissioned paper not included here, "Policy Analysis for Changes in Vocational Legislation," Melvin Barlow, Professor Emeritus at the Graduate School of Education, University of California at Los Angeles, documents the involvement of various groups and issues over time:

> For eleven years the promoters of the vocational movement in education studied the need for the development of vocational education and arrived at foundation ideas, immediate directions, and the basic principles of the movement. Involved in this process were well-known people from business, industry, education, the public at large, and organized groups such as the United States Chamber of Commerce.
>
> The prime mover of the vocational education movement was the National Society for the Promotion of Industrial Education, (now known as the American Vocational Association) which was founded in 1906 with Henry S. Pritchett, president of the Carnegie Foundation as its first president. State groups were formed throughout the nation to get grass roots inputs concerning the principles and goals of industrial education. In time it was apparent that the need in education exceeded by far the program of industrial education, so agriculture and home economics were added and the movement became known as a vocational education movement. Annual conferences were held by the Society from 1908 to 1917. Their reports of proceedings, special publications, and related articles in professional journals comprise resources which defined the basic principles of vocational education.

While Barlow states "the introduction of vocational education into the public school systems required adoption of a broader view of what public education should be," he also goes on to argue that recognition was given to the task of offering a foundation in general education before specialized vocational training began. Moreover, the early years of the movement placed an importance on the equality in access to vocational training.

Following the Smith-Hughes Act of 1917, Congress passed additional acts in 1929 and 1934 which provided increased funding for vocational education. The George-Deen Act of 1936 not only provided additional funds; it added the area of distributive education. Still more increased funding and money for vocational guidance came with the George-Barden Act of 1946. The next major changes in vocational education came with the Panel of Consultants on Vocational Education, appointed by President Kennedy in 1961. Barlow notes that an important aspect of social policy was established at this time:

> Among the major changes recommended by the Panel, and included in the Vocational Education Act of 1963, was a change from appropriating federal funds on the basis of occupational need to the appropriation of funds on the basis of service to people... The people to be served were identified as: (1) students in

> high school, (2) students in postsecondary schools (but not four year colleges), (3) students with special needs (disadvantaged, handicapped, and the like), and (4) adults.

In 1966 President Johnson appointed a committee to further study vocational education. That committee's recommendations became the basis for Congress's Vocational Education Amendments of 1968.

Changes continue to occur in the vocational education legislation. From a Federal perspective, there is increasing attention being paid to the issue of vocational education policy as one of several human resources policies. Within P.L. 94-482 this notion appears at various places, but its intent is no more clearly indicated than in the charge jointly given to the National Advisory Council on Vocational Education and what was formerly called the National Commission for Manpower Policy, in Sec. 164(b)(4)(A), to

> identify, after consultation with the National Commission for Manpower Policy, the vocational education and employment and training needs of the nation and assess the extent to which vocational education, employment training, vocational rehabilitation, and other programs under this and related Acts represent a consistent, integrated and coordinated approach to meeting such needs.

What, then, is vocational education? What is the role of Federal policy in this enterprise? To these seemingly simple questions there are no simple answers.

The present papers were originally designed to be used in the preparation of the study plan and not for publication. It became clear, however, that many of them could serve an additional purpose. The public policy arena is filled with debate not so much over what policy to follow, but as to what a policy under discussion is about. The commissioned papers illuminate a diversity of viewpoints and focus on significant themes. It was therefore decided to publish a collection of the papers so that they might reach a larger audience for discussion.

The papers have been divided into four sections. The first deals with selected features of a federal grant-in-aid program. The second includes discussions of available quantitative data sources. The third is concerned with issues in program evaluation. The last section treats selected aspects of vocational education policy. Each section contains a brief discussion introducing the reader to the policy issues raised. Since the papers were originally intended for a different purpose, they have been edited for this publication. Furthermore, the ideas and opinions expressed are those of the authors and should not be taken to represent the views of the National Institute of Education or the members of the Vocational Education Study Staff.

The staff acknowledges the assistance provided by the Center for Educational Research at Stanford University and its personnel, Christine Robinson, Bruce Harlow, and Robert Calfee, Director of the Center, in the preparation of the volume. Furthermore, recognition should be given to Garry R. Bice, Henry M. Levin, John E. Tirrell, Sandra C. Drake, and David C. MacMichael, who also developed commissioned papers and whose advice was instrumental in the development of the study plan.

Rodney Riffel
Vocational Education Study
November 1, 1978

CONTENTS

Page

Foreword iii
Preface v

I. SELECTED FEATURES OF A FEDERAL GRANT-IN-AID PROGRAM 1

On Implementing the Vocational Education Amendments of 1976
Thomas J. Anton 3

Distribution and Allocation of Funding for Vocational Education
Jay G. Chambers and Susan Sargen 23

Federal and State Governance of Vocational Education: Its Relations to Compliance with Federal Rules and Regulations
Don K. Gentry 37

Research Issues for Vocational Education: Compliance and Enforcement of Federal Laws
Michael W. Kirst 51

II. QUANTITATIVE SOURCES 71

The Vocational Education Data Base
Arthur M. Lee 73

Effects of Vocational Education Programs: Research Findings and Issues
John T. Grasso and John R. Shea 101

III. ISSUES IN PROGRAM EVALUATION

The Phoenix of Vocational Education: Implications for Evaluation
W. Norton Grubb 195

The Effects of National Policy on Vocational Education Evaluation
Thomas M. Bogetich and
Norma Phillips Lammers 217

Vocational Education: Education or Short-Run Training Program?
John Walsh 229

CONTENTS (Continued)

Page

Vocational Education in Rural America: Current Problems and Prospects
Jonathan P. Sher 259

Race and Sex Compliance Issues in Vocational Education
Phyllis McClure 283

Vocational Education for Special-Need Students
Phyllis Hamilton 309

Vocational Education as a Strategy for Eliminating Poverty
Lester C. Thurow 323

I. SELECTED FEATURES OF A FEDERAL GRANT-IN-AID PROGRAM

Federal financial support of institutional vocational education has traditionally been carried out through grants-in-aid to the states. In return, the states have been required to comply with various regulations established under the auspices of the Vocational Education Act of 1963 as amended. The 1976 Amendments to that Act require that each state file a five-year plan outlining procedures by which it will seek to achieve the purposes of the federal legislation. Amending the earlier statute, the Education Amendments of 1976 state that the purpose of Title 1, Part A of the legislation is

> to assist States in improving planning in the use of all resources available to them for vocational education and manpower training by involving a wide range of agencies and individuals concerned with the education and training within the State in the development of the vocational education plans. It is also the purpose of this part to assist them--
>
> "(1) to extend, improve, and where necessary, maintain existing programs of vocational education,
>
> "(2) to develop new programs of vocational education,
>
> "(3) to develop and carry out such programs of vocational education within each State so as to overcome sex discrimination and sex stereotyping in vocational education programs (including programs of homemaking), and thereby furnish equal education opportunities in vocational education to persons of both sexes, and
>
> "(4) to provide part-time employment for youths who need the earnings from such employment to continue their vocational training on a full-scale basis,
>
> so that persons of all ages in all communities of the State, those in high school, those who have completed or discontinued their formal education and are preparing to enter the labor market, those who have already entered the labor market, but need to upgrade their skills or learn new ones, those with special educational handicaps, and those in postsecondary schools, will have ready access to vocational training or retraining... of high quality, which is realistic in the light of actual or anticipated opportunities for gainful employment, and which is suited to their needs, interests, and ability to benefit from such training." (Sec. 101).

The papers that follow address various aspects of the interrelationships among Congressional intent and purpose, state implementation, and the Federal grant-in-aid process.

Thomas J. Anton explores various problems asociated with the planning process in his paper "On Implementing the Vocational Education Amendments of 1976." Anton examines the vocational education planning strategy within the context of the Federal grant system as a whole and speculates upon how its outcome is likely to be shaped by the specific characteristics of the planning process. He also places the planning process within the political framework of educational organization.

For the reader unfamiliar with the subtleties of the funding process in vocational education, the descriptive essay, "Distribution and Allocation of Funding for Vocational Education," by Jay G. Chambers and Susan Sargen, will prove useful. The authors address some of the issues that arise on the state level. They also review the general features of the financing of vocational education and explore what they believe to be relevant policy questions for the success of current and alternative future schemes for financing vocational education.

The next paper, "Federal and State Governance of Vocational Education: Its Relation to Compliance with Federal Rules and Regulations," by Don K. Gentry, provides a description of current patterns of governance of vocational education at the state level. The various types and styles of vocational education administration in the states are as diverse as the field itself. Gentry explores the implications of this fact for federal compliance.

The research issues that arise out of compliance and enforcement of Federal laws are the topic of Michael W. Kirst's paper, "Research Issues for Vocational Education: Compliance and Enforcement of Federal Laws." He examines the effectiveness of compliance from several vantage points and argues that

> the 1976 Federal Act lacks the incentives and sanctions to bring about compliance with Federal intent in the next few years. There is some hope for a long run (10 years) compliance. I would content further that it is unlikely that federal influences will ever be sufficient to reorient vocational education substantially without drastic changes in the existing federal-state-local delivery network.

This paper helps to clarify the issues involved in the establishment of federal intent.

ON IMPLEMENTING THE VOCATIONAL EDUCATION AMENDMENTS OF 1976

Thomas J. Anton

Title II of the "Education Amendments of 1976" represents a substantial extension and modification of national vocational education policy. Increased funding is authorized for the period fiscal 1978 through fiscal 1982 and a major new policy commitment to eliminate sex bias in employment education is spelled out in detail. Perhaps the most notable characteristics of the legislation, however, are several provisions designed to simplify and rationalize administration of federal grants for vocational education programs. Former requirements for periodic submission of "boilerplate" paperwork are eliminated. Eight categorical programs are consolidated into a single "basic" state grant, reducing the number of separately funded programs by half while freeing state-local officials to set their own priorities in these areas. And, in broadly-conceived but carefully specified articles, states are required to prepare five-year plans, modified annually through participation of a large number of affected constituencies, as a condition of participation in the federal program.

Although not entirely new--planning requirements are found in the pre-1976 legislation--these simplifying-rationalizing provisions give new emphasis to what may be thought of as a "planning strategy" for improving federal-state-local delivery of vocational education services. My intention here is to examine what this planning strategy means, how it is constructed, and how it is supposed to work. In addition, by placing the strategy within the context of the federal grant system as a whole, I propose to speculate about some probable outcomes. These exercises, in turn, will permit me to suggest the kinds of issues certain to arise in any effort to monitor and/or evaluate the impact of such a strategy.

At the outset, it may not be inappropriate to point out that the issues raised by this planning strategy have a significance that extends far beyond the vocational education program itself. After a decade of unprecedented growth, federal grants to state and local governments will exceed $80 billion in fiscal 1978; such grants now constitute the largest single source of state and local government revenue.[1] Furthermore, the continuing fiscal difficulties of large cities, continuing high levels of unemployment (often both cause and consequence of fiscal problems), continuing inflation, and continuing intra- and inter-regional population movements all imply that federal support for lower-level public services will continue to grow. Under these conditions, the question of how federal dollars are used once they leave Washington becomes more pressing than ever before. Under these conditions, too, the effectiveness of a "planning strategy" in achieving federal goals is an issue that has, and will continue to have, widespread relevance.

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Program Design

Types of grants. Whatever the officially stated purposes of a given aid program--the most recent Catalogue of Federal Domestic Assistance lists some 1,030 different federal assistance programs--policy makers must determine the extent to which the program shall be constrained by various federal application, accounting, and reporting requirements, typically referred to as "strings." During the 1960's, when Democratic presidents enunciated hopes for major social reforms, the principal vehicle for assisting in the achievement of such hopes was a federal grant to which many strings were attached. State or local governments were required to send in thick applications, with twenty or thirty copies; if approved by a federal agency the recipient unit was typically required to set up strict accounting procedures to keep track of federal funds received and spent; and a variety of initial, intermediary, and final reports were required to be submitted to the relevant Washington agency. More than 400 new programs of this type were created during the 1960's;[2] because they were available only for carefully limited purposes, they came to be known as "project" or "categorical" grants. Over time, the flowering of project grants led to increasingly widespread and vociferous complaints against the enormous quantity of paper and other procedural "red tape" generated by the strings in such programs.

Program designers responded to these complaints by devising what have come to be known as "block grants," the first of which was enacted in 1966.[3] Instead of tightly specified purposes, block grants are made available for broadly defined goals: "educational assistance" rather than "support for third grade curriculum development," for example. Instead of multiple applications to secure approval from a federal agency official, block grants typically make money available on the basis of a statutory formula that cannot be affected by bureaucratic action. Instead of multiple and continuing reports, block grants allow considerably more discretion to state and local officials in utilizing federal funds and usually require little more than an initial statement (a plan) and a final report. Block grants, in short, contain many fewer "strings" than categoricals, and presumably free lower-level governments from much of the red tape generated by more constrained programs.

Republican assumption of the Presidency in 1968 led to a period of increasing popularity for block grants. Indeed, block grants became a major element in the "new federalism," leading to programs in employment training, social services, and community development that were initially structured as block grants. The ideology of "less federal interference" and "strong state and local government" that defined Republican support for block grants produced, as its logical extension, a program in which federal strings were essentially reduced to zero: General Revenue Sharing. This program, adopted in October 1972 and re-enacted in the fall of 1976, distributes approximately $6 billion per year to all state governments and all units of general purpose local government in the country, according to a statutory formula. As originally enacted, expenditures from these funds could be made only for eight "priority" categories but, since these categories included all of the major functional purposes of government (except education), this federal constraint was hardly any constraint at all. Recipient units were required to publicize and submit to the Office of Revenue Sharing (in the Treasury Department) a "planned use report" before they received the funds and an "actual use report" after the funds had been expended. These reports simply certified that the federal dollars had been lawfully expended, however, and were neither intended or treated as constraints on recipient discretion. General Revenue Sharing thus was and remains an essentially unrestricted grant.[4]

At one extreme, then, is a tightly constrained grant program, in which purposes are carefully set out, funds disbursed only after detailed federal review of lower unit application forms, and actual expenditures monitored through a variety of periodic reports submitted to Washington. At another extreme is a program design that permits lower-level units to expend funds with essentially no constraint on purpose and minimal reporting requirements. In between, there can be an almost infinite variety of points, depending on the kind and specificity of constraints attached to any given program. From a political point of view, the issue of constraint is important because its resolution in a particular program defines the extent to which a national purpose will be identified and enforced in the distribution of federal funds. From an intellectual point of view the issue is important because each package of constraints can be thought of as reflecting a theory of how the behavior of lower-level units can be influenced by federal program design: each program in effect states a hypothesis of how a given range of behaviors can be achieved by a given program package. General Revenue Sharing reflects no national purpose other than general financial support for existing state and local governments: program purposes are not defined in a constrained way and no reporting or other strings are created to monitor lower-unit expenditures. String-bound categorical programs, on the other hand, presumably reflect a more considered definition of national purpose and a more clearly specified theory of what strings will induce lower-unit behavior that accords with the national purpose.

Distinctions between tight, loose, and no federal constraints in program design represent no more than a beginning in understanding grant policies. We shall observe shortly that many designs combine tighter and looser constraints in ways that confound any easy classification. It is also clear that political dynamics cause program designs to change through time. A recent examination of HUD's 701 Planning Assistance Program, for example, has documented the transformation of 701 from a tightly constrained, project-related program to a virtually unconstrained source of free money.[5] Similarly, recent studies by the Advisory Commission on Intergovernmental Relations (ACIR) have discovered a "creeping categorization" in block grants that transforms such grants over time into programs that closely resemble project (or categorical) designs.[6] Despite these (and other) difficulties, it is nevertheless useful to try to see the system as a whole. ACIR has made such an effort by attempting to classify and observe the distribution of all project (categorical), formula and mixed grants for the years 1967 and 1972 (Table 1). The analysis from which these numbers were drawn is deficient in several respects: data from the two years are not identical, the categories represent a

TABLE 1

Federal Grant Program Design, 1967 and 1972

		1967			1972	
	No.	$	Percent	No.	$	Percent
Project Grants						
Primarily to States	23	1,229	8	36	2,960	8
Primarily to Local	10	878	6	19	4,585	13
Formula Grants						
Primarily to States	15	10,235	67	18	23,909	68
Primarily to Local	--	--	--	2	755	2
Mixed Grants	41	2,652	18	25	3,195	9
Total	89	14,994	100	100	35,404	100

SOURCE: Adapted from ACIR, Federal Grants: Their Effects on State-Local Expenditures, Employment Levels, Wage Rates (Washington, February 1977), pp. 27,30. Figures may not add up to totals because of rounding.

"translation" of more than 1,000 programs (1972) into just 100 categories, and the years shown here may be misleading in failing to represent later innovations such as General Revenue Sharing or additional block grants. Yet the basic system dimensions revealed here seem stable over this five-year period and, for reasons to be explored below, it is probable that those dimensions remain very much the same today. In particular, these numbers reflect vast increases in federal aid and also reflect the considerable increase in categorical or project grant programs. Note, however, that while the number of project grants has increased dramatically--to 55 of the 100 shown here for 1972--formula grants in both years account for more than two-thirds of the dollars. Note, too, that in both years most of the dollars and most of the grants go to state rather than local governments. Thus although the dollar amount of federal aid has increased enormously, and local governments have become important recipients of direct federal aid, the traditional American pattern of providing funds to state governments, on the basis of statutory formulae, remains very much in force. Since formula grants are less amenable to close monitoring and control than more tightly constrained project grants, these numbers suggest that both politics and theory at the federal level reflect a dominant commitment to "loose" rather than "tight" constraints on lower-level utilization of federal funds.

This dominant commitment to loose constraints is well illustrated by the vocational educational grant program that developed during the 1960's.

Between fiscal 1964 and fiscal 1975 some $3 billion in federal aid was distributed, in annual amounts that increased from $55 million to $482 million. Each state was entitled to a share of each annual fund allotment according to a statutory formula based on age distribution and state per capita income, with heavy emphasis (50%) placed on the proportion of each state's population between the ages of 15 to 19. To receive the federal funds to which they were entitled, state governments had to agree to match federal part B funds--the basic grant for secondary educational vocational training--on a dollar-for-dollar basis, and were required to submit a state plan that satisfied the Office of Education every year. Within each state, distribution to the local agencies providing the training programs was to be made only after state approval of local project proposals, each of which was required to meet the requirements of the federal legislation.[7]

The pattern of formula grants to states followed by project grants by states to local agencies was and remains a popular model of intergovernmental assistance, perhaps because it provides considerable freedom to states to determine disposition of federal dollars. Successive congressional reviews of that freedom, however, led to efforts to impose tighter constraints. In 1968, for example, the 1963 Vocational Education Act was amended to require state use of specific criteria in distributing funds, to mandate evaluation and planning improvements, and to earmark funds for specific groups--postsecondary, disadvantaged, and handicapped--whose training needs had not been well-served by state agencies in their distribution of available federal funds.[8] By the early 1970's, therefore, the "loose" design implied by formula grants had become much tighter as specific set-asides for categories of trainees were enacted, along with increasingly detailed requirements for administration, planning, and evaluation.

Criticisms of controls. The loose controls typical of both the federal grant system as a whole and the original design of the Vocational Education Act, however, are not easily modified, even by relatively clear and "tight" requirements. A 1972 GAO study of vocational educational programs at the secondary school level in four states concluded that "all who need vocational education were not receiving it, funds allocated for students with special needs were not properly expended, and evaluation of the program suffered from a lack of management information."[9] In 1974 the GAO completed a more comprehensive study, based on detailed examination of seven state programs and interviews with national government administrators, that made clear how loose the program continued to be, despite all the tightening efforts.[10] Among the more important findings of that study were:

> Although federal funds are designed to provide a catalyst to encourage states to increase their own funding and develop new programs to meet the needs of a changing labor market, the ratio of state to federal support has declined in 18 states, very large proportions (up to 77 percent) of federal part B funds are retained by state governments to pay administrative costs rather than channeled to local training programs, and "In many instances Federal funds have been used to maintain existing activities year after year rather than primarily to initiate new program options." (p.9)

> Although the 1968 amendments specifically required states to use at least 15 percent of the annual part B allotment for programs serving the disadvantaged and 10 percent for programs serving the handicapped, "annually about half of the States spend less than, or only about, 15 percent for the disadvantaged, and more than half of the states annually spend less than, or only about, 10 percent for the handicapped." (p.15)
>
> "Some states, over a 3-year period, have spent no state or local funds for the disadvantaged or handicapped but continued to receive federal assistance for such programs." (p.16)
>
> Although federal vocational expenditures increased by 776 percent and state-local expenditures increased by 818 percent between fiscal 1964 and fiscal 1973, enrollments in vocational programs have not increased proportionally: "In one state we visited the federal expenditures increased 1,188 percent from $2.6 million in fiscal year 1964 to $33.5 million in fiscal year 1973--an increase of 829 percent in 1964 dollars. Enrollment increased 61 percent during this same period...."
>
> At no level in the system is there evidence of the kind of need-related program planning required by federal law. Local vocational educators report that "they do not regularly survey their communities to determine the nature and extent of need for vocational education" (p.25). State officials neither attempt to verify local planning documents (p.23) nor perform needs analyses of their own; instead, "State plans are developed around the amount of funds expected to be available, rather than on the basis of relative needs" (p.24). State program managers divide federal funds between secondary, post-secondary and adult programs on the basis of "past practices and the particular influence of respective agencies" (p.24). The resulting state plans "are prepared only for compliance with OE requirements in order to receive Federal funding. States do not use these plans for operational purposes and they do not measure progress against what is described in the plan" (p.23). Yet, "no state's funding has ever been withheld or terminated." (p.23)
>
> Without assessment of need, fund distribution is skewed: "Nationwide...only 51 percent of Federal funds used for vocational education in fiscal year 1973 were directed to metropolitan areas where 69 percent of the nation's population resided in 1970 according to the 1970 Census. In one state we visited only 29 percent of Federal vocational funds were directed to metropolitan areas where 66 percent of the state's population resided." (p.24)
>
> Obviously, then, "States have treated Federal funds as another source of general revenue, and have used these funds primarily to maintain existing programs." (p.28)

These findings are generally consistent with a number of other studies, before and since, in portraying widespread neglect of the specific provisions of federal law.[11] Taken literally, they amount to a thorough condemnation of public officials whose actions consistently undermine federal policy and hinder the nation's ability to adjust to rapidly-changing labor market conditions. From an analytic rather than programmatic perspective, however, these findings represent simply another case, similar to hundreds of others, of loose constraints, or tight constraints that are loosely applied, or both. Congressional oversight often focuses attention and blame on federal program administrators--the House Education and Labor Committee report in this case refers at one point to HEW's and OE's "slovenly and irresponsible ways."[12] It is not always clear, however, that such remarks are aimed at the right targets. The 1974 GAO report noted (p.19) that "In early fiscal year 1975 there were 32 people at headquarters and 33 in regional offices assigned to vocational education." By 1976 there were another 29 people in the Washington office, but the Education and Labor Committee of the House was clearly impressed with the inadequacy of this staffing pattern:

> The Committee cannot understand why the Office of Education has cut back so drastically on the persons assigned to administer the Act within the last 10 years. The program has grown from having an expenditure of approximately $260,000,000 in 1967 to an expenditure of approximately $550,000,000 in fiscal year 1976. In this time of fiscal restraint when we must make every effort to get the maximum from each dollar expended by the Federal government, it seems totally irresponsible to decrease by one-third the number of people who are to oversee the proper administration of a program in which the Federal funds have more than doubled.[13]

Without knowing the details of these staff reductions it is difficult to judge whether OE is the right target of congressional complaint. We do know enough about governmental budgeting, however, to recognize that staff reductions during a time of large-scale program growth are quite exceptional. It is therefore conceivable--even likely--that staff reductions were imposed on OE through departmental, OMB, or even White House intervention, in which case both the target and the meaning of the complaint must be given a rather different interpretation. An alternative to criticizing program administrators for not doing enough, with enough staff, to achieve stated goals, would be to point to another truism about federal assistance programs, namely, that program goals are seldom clear, usually unstable, and thus subject to constant political uncertainty.[14] Knowing what provisions of law to take seriously, or how energetic an enforcement program should be, is thus no easy task.

In the vocational education case, Congress stated program commitments and annually increased appropriations until they reached very substantial levels indeed, but as funds grew administrative staff personnel were reduced. Program administrators obviously could read a variety of different signs in these events, including signals suggesting that someone--if not in the Congress then in superior positions within the Executive Branch--was content to allow loose administrative enforcement of legislative provisions. Nor would it be unreasonable to infer that vague statements about what should or should not be in a state plan, or about the criteria that should or should not be used in allocating funds, represented statements of good intention rather than clear policy directives. Whether or not national administrators *could* have enforced legislative requirements for needs-based planning, use of federal funds only for new program development, and special attention to named groups thus may be a less significant question than whether they *should* have made more of an attempt, given what must have seemed a considerable amount of uncertainty in the real objectives of the program.

Evidence of both program failure and administrative indifference appears to have been important in shaping the 1976 amendments. Although the basic formula-funding-to-state-governments mechanism was not changed, the Congress met the administration issue head-on. Ten new senior positions were mandated for the Bureau of Occupational and Adult Education to fortify administrative leadership in enforcing the amended legislation. Moreover, the Commissioner of Education is instructed to "assign to the Bureau, by the end of fiscal year 1978, at least 50 per centum more persons to directly administer the programs authorized under this Act than were assigned to directly administer this Act during fiscal year 1976" (Sec. 160(b)(3). A separate $25 million authorization to fund state-level planning and evaluation activities was also enacted, along with limitations on the proportion of federal funds that could be used for state administration. The lack of administrative concern for program goals that had become so noticeable after 1968 was to be corrected, in 1976, by more personnel and more money for both federal and state agencies.

More significantly, perhaps, these beefed-up agencies were given an expanded and more detailed mandate for action. Consolidation of several categorical funds into a single "basic grant" was accompanied by a far more detailed statement of how federal and state authorities were required to use their new legislative discretion. To receive federal monies under this program, each state is now required to prepare a five-year plan in which current and future needs for job skills in the state and (where appropriate) region are identified according to federally-mandated categories of information, a strategy for meeting these needs through specific courses or other training is described *and justified* in detail, and a detailed statement of how federal, state, and local funds are to be used *in each of the five years* is set out. Borrowing a common European practice, the 1976 amendments also require that states update these five-year plans annually, by preparing an "annual program plan and accountability report." Among other required elements, the annual program plan must "set out any updating of the five-year State plan deemed necessary to reflect later or more accurate employment data or a different level of funding than was anticipated," show "explicitly" how funds have been used in the preceding year, and "show explicitly the extent to which the State during the fiscal year preceding the submission of the plan and report has achieved the goals of the five-year plan...."[15]

Analytic program design. Annually updated five-year plans targeted on explicitly defined goals, adjusted on evidence derived from evaluation analyses of the extent to which goals are being achieved, are elements of the *analytic theory of program design* that is one of two major foundations of the 1976 amendments. Analytic behavior by state governments is enforceable by the Commissioner of Education, who is prohibited from approving a state plan "until he has made specific findings, in writing as to the compliance of such plan with the provisions of this Act...." Nor can the Commissioner approve an annual program plan and accountability report unless he finds, in writing, "that the annual plan and report shows progress in achieving the goals set forth in the five-year State plan." Instead of simply "signing off" on anything submitted by state governments--which appears to have been the case in the past--the Commissioner is now required to become the guardian of rational policy analysis by the states for vocational education. Absent his finding that such analysis is taking place, the Commissioner is authorized to withhold funds from non-analytic states.[16]

Representational program design. In contrast to this analytic theory, the second major foundation of the 1976 amendments is the assumption that programs should be designed by affected constituencies. Apparently reacting to testimony that many groups and/or organizations involved in vocational education are not consulted in the planning process, Congress insisted that development of five-year plans "involve the active participation of" representatives of secondary and post-secondary education, community colleges, institutions of higher education, local school boards, vocational education teachers, local school administrators, the State Manpower Services Council, and others. Each state's Advisory Council, responsible for evaluating state programs and advising both state and federal governments on the adequacy of state plans, is required to "have as a majority of its members persons who are not educators or administrators in the field of education" but who instead represent various other public and private sector organizations as well--fully 20 different groups are specifically identified as entitled to representation on the State Advisory Council. The legislation recognizes that differences among so many groups may be irreconcilable and thus assigns final responsibility for the state plan to a single state board in each state. For both the five-year plan and the annual Program Plan and Accountability Report, however, any of the various organizations guaranteed participation is entitled to appeal a state board's decision directly to the Commissioner of Education, who "shall determine if the state board's decision is supported by substantial evidence, as shown in the state plan, and will best carry out the purposes of the Act." Subject only to legal review, the Commissioner is by these words thrust directly into the politics of each state's planning processes. Widespread group participation and potential appeal to higher authority, taken together, may be viewed as a *representational theory of program design*.

A mixed design. The 1976 Vocational Educational Amendments thus create a design that can justifiably be thought of as "mixed." Although a formula pegged to population age-groups is used to determine the amount of money a state is eligible to receive in a "basic grant" (itself very similar to other so-called "block grants"), expenditures are otherwise constrained by required "set-asides" for disadvantaged, handicapped, and post-secondary programs (a mechanism similar to traditional categorical program funding). Assurances that states will properly administer and account for expenditures, will use federal funds to supplement rather than replace state-local funds, will give priority to applications from economically depressed areas that propose innovative programs, etc., constitute another set of constraints contained in a general statement that must be filed by every state. But the most interesting, and potentially most powerful, constraints are the process constraints based on the analytic and representational theories of program design. The planning requirements are interesting because implementing them would imply drastic reform in existing processes of state decision-making. The representational requirements are interesting because they seem so obviously in conflict with the planning requirements. Rational policy planning requires clearly specified goals; agreement on such goals, however, is bound to become more difficult as the number of participants whose consent is required increases. The program designed by the 1976 amendments, in sum, is a mixture of loose and tight constraints built on two clear but quite contradictory theories. Can such a design be implemented?

Thinking About Implementation

The politics of program change. I have already pointed out that mixed program designs are not at all uncommon among federal assistance programs, nor is it at all unusual to find programs based on conflicting theories, or aimed at contradictory objectives. The reason for these conflicts is that, whatever else they may be, assistance programs are designed to service constituencies. As political conditions change through time, the influence of various constituency groups changes or new constituencies come into existence. When such shifts are recognized in national legislation in a piecemeal way, the result often is a program whose unchanged preamble or statement of purpose may seem very different from the changed language of the operative clauses. Programs that endure are periodically subjected to thoroughgoing revision in order to bring some coherence to the relationship between program goals and program operations. Comprehensive revisions of this kind always have an "up-front" intellectual and policy rationale, but they are better understood as expressions of the current balance of power between the various constituencies serviced by the program.

Often enough, program changes take place shortly after an election: The recent shift from Republican to Democratic control of the Executive Branch, for example, leads to changes in eligibility provisions for EDA grants, or changes in the distribution formula for community development block grants, in order to reflect expanded political influence of larger cities. But either piecemeal or comprehensive changes also result from more normal processes of oversight or administrative review. The Law Enforcement Assistance Administration, whose program history resembles that of VEA in many ways, began as a block grant to states. As it became clear that disproportionate amounts of LEAA funds were being allocated to police activities (in practice, the purchase of police hardware), other law enforcement constituencies became mobilized to lobby Congress for program adjustments. Changes in the constituency power balance can be measured, over time, in amendments that set aside specific amounts from LEAA funds for the courts, the prison systems, and juvenile correction programs. This process, referred to earlier as "creeping categorization," gave a rather different look to LEAA, but in each case program changes arose from political mobilization rather than changes in theory or purpose.[17]

From this point of view, the 1976 Vocational Educational Amendments obviously reflect the political ascendancy, in Congress at least, of women, community colleges, public and private manpower training interests, and other constituency groups who appear to have been neglected or ignored by the vocational education "establishment." Although the representational theory is officially justified in terms of comprehensiveness in program design and better coordination among affected groups, its principal impact will be to increase access for these *outs* to resources previously controlled by the *ins*. This is likely to be an important and tangible victory, since new groups are not only given a seat at the very large table around which state spending bargains will be struck, but also receive direct access to higher authority in the event that fund distribution is not what they would like it to be. If we assume, as we must, that the organizations previously favored will not easily give up their resources in favor of the new groups, and if we also assume that representatives of the new interests will competently represent those interests, than we can foresee that "coordination" in state policy making will quickly take on the form of a zero-sum game, in which funding gains for the new interests will come at the expense of the older, established interests. "Coordination" will therefore be structured not around the use of joint resources to achieve common goals but rather around efforts to strike bargains between the organizational desire to survive and the political desire to change. The nature of those bargains, the processes through which they are struck, and their impacts on program development are all topics worthy of detailed study.

Impediments to "planning." The belief that state decision processes are likely to focus on fund distribution rather than program planning arises from well-established theoretical conclusions about organizational maintenance needs and the effect of multiple participation on conflict over resources. Although based in theory, such notions also have persuasive empirical support. Many federal grant programs include planning requirements of one kind or another, and the results of such requirements seem quite similar across programs. LEAA, for example, required annual comprehensive plans from states as a condition of eligibility for federal dollars; LEAA also required that some representative state agency construct the plans and distribute funds. Careful recent reviews of the LEAA experience document conclusions that might as well have been derived from the VEA hearings. State plans--including a California plan that ran to 6,000 pages!--were always submitted, never reviewed, and seldom used: they were the "boilerplate" necessary to comply with legislative requirements and were treated as such. State planning bodies made up to represent various constituencies divided up federal grants according to the relative power of the various constituencies and the political imperative to spread the money around, paying little attention either to plans or to the analyses that presumably structured them. State grants to local agencies were seldom if ever given stringent review before the award or careful evaluation after, apart from auditing to protect both state and local agencies from charges that funds were improperly expended--i.e., expended by an agency other than the designated agency. Since neither federal nor state agencies invested much time in "review" of program plans, no one was ever quite clear about how these vast amounts of money were being spent.[18] As one local official, who had helped design LEAA, recently testified, "There is no oversight of LEAA and its programs, and there never has been."[19]

The LEAA case, with a design similar to that of VEA, underlines the difficulty of bringing "planning" and "politics" together in the American system. The major sources of this difficulty are apparent in the history of state-local planning efforts during the past four decades. To begin with, interest in planning always has been stronger in Washington than in state capitols or municipalities. A few larger cities experimented with planning during the early decades of this century, and state planning activities were organized by some states during the depression, but these efforts were neither significant nor lasting. As World War II drew to a close, postwar planning commissions were created by many states in anticipation of large-scale unemployment following the end of hostilities. When these predicted economic problems failed to develop, the planning commissions lost their reason for existence and quickly disappeared.[20]

Meanwhile, a federal interest in local planning was beginning to emerge in national programs aimed at the elimination of slums and the rehabilitation of urban areas. When Congress created an "Urban Renewal" program in the Housing Act of 1954, it recognized and stimulated the national interest in planning by enacting Section 701 of the Housing Act, creating an urban planning assistance program. To be eligible for urban renewal funds, communities had to show evidence of a seven-part "workable program," one of whose parts had to be a master plan to guide future development. Recognizing that almost no communities had such plans, or the capacity to easily develop them, Congress offered, in Section 701, to pay 50 percent of the cost of developing such plans, and allowed communities to pay their share in "soft" matching funds. Local planning to achieve eligibility for urban renewal funds was thus made possible at virtually no additional cost to municipalities.

Section 701 stimulated an enormous volume of local planning, created jobs for large numbers of planning consultants, and led to the creation of planning programs in more than 100 universities across the county. As the federal fraction increased (to two-thirds) and additional units were granted eligibility for 701 assistance--state governments became eligible in 1959 to pursue state and interstate planning--the constituency serviced by the program was broadened to include virtually all governments. By 1970 more than 6,000 of the nation's 38,000 units of general-purpose local government had received 701 support, along with a myriad of other county, state, regional, interstate, and other organizations--including Indian tribes.[21]

Studies of local planning during the past two decades, however, have consistently reported the ineffectiveness of all this activity in either guiding physical development or promoting rational choice. Early critiques often emphasized the inadequacies of the popular "blue-ribbon" theory of planning.[22] Under that theory, decisions about future development were held to require independent, analytical, and nonpartisan judgments; the appropriate mechanism to make such judgments, accordingly, was a panel of distinguished local citizens who would sit as an independent commission, with no formal ties to other governmental or political mechanisms. The result of this structural separation, more often than not, turned out to be political irrelevance: recommendations from commissioners who had little direct knowledge of politicians typically failed to deal with issues of interest to the politicians and thus were typically ignored. Studies of planning through the 1950's and early 1960's are dominated by images of ineffectiveness. Plans are shown to have only "shelf careers," and planning to be done by individuals who understand that the plan is primarily a justification for federal funding and thus not to be treated seriously: In 1963 I personally examined one consultant's plans for three municipal and one county government in suburban Chicago, each of which had precisely the same format, the same content, and very nearly the same recommendation.

To correct this structural separation of planning from politics, politicians were appointed to planning commissions, or commissioners were given access to political agencies such as city councils, or the planning function was placed within the office of the chief executive (mayor or manager). Studies of planning under these improved conditions, however, have noted that improved access and communications do not necessarily guarantee improved planning. For one thing, there is bound to be some strain between rational analysis and the imperatives of politics that can lead to difficult personal relationships. Developing or defending proposals for which there is no analytic support may be difficult for a planner to do, but if he does not do such things, and do them well, his effectiveness is likely to diminish. Moreover, political changes are so frequent among mayors and councilmen that planners can seldom anticipate that major project ideas will in fact be carried through by the same political leaders who initiated them. Finally, sudden social or economic changes in the environment--a natural disaster, loss of a major source of local or regional employment, a major new state or federal program, etc.--may well invalidate most of all of the assumptions under which some plan was developed or planning process begun. The increasing dependence of local and state governments on federal aid gives this last point growing significance, particularly since some federal programs--Economic Development Administration grants, for example--recently have eliminated planning requirements. Under these conditions, "planning" has not been, and is unlikely to be, very effective at the local and state level, although individual planners may have considerable influence.[23]

"Planning" incentives in VEA. Despite the general absence of evidence for "successful" planning programs, the federal government continues to fund a variety of planning assistance programs. The ACIR has estimated that some 24 federal programs provide planning assistance and that these programs have stimulated creation of more than 4,000 regional or area-wide planning units. According to the City of Seattle, any given metropolitan area is likely to have as many as 20 federally sponsored agencies planning for various multi-jurisdictional programs.[24] To the extent that these agencies, together with the state agencies required by federal law to "plan" in order to receive federal funds, provide arenas within which bargaining over fund distribution can take place, a useful purpose is served. But dividing the booty is a long way from "planning." If other planning requirements have generally failed to deal with political turnover, socioeconomic change, and the drive for constituency/organizational survival, what chance is there for the VEA program?

Recall that the Commissioner of Education is authorized to withhold funds if state five-year plans do not seem to him to meet the purposes of the Act or if annual program-accountability reports do not show sufficient progress toward planned objectives. Perhaps it is worth recalling, too, that similar authority existed prior to the 1976 amendments but was never used. By expanding the number of required participants in the planning process, the 1976 amendments increase the probability that appeals to the Commissioner will be made and thus increase the Commissioner's opportunities to enforce national planning requirements. This expansion of opportunity appears to enhance the Commissioner's power considerably, but for several reasons it is safe to predict that this power will be used sparingly, if at all, with great care taken to avoid public confrontations.

Apart from a natural desire to maintain friendly relations with colleagues across the country and a political desire to avoid charges of federal intervention in state affairs, the Commissioner will have strong incentives to avoid exerting all the authority assigned to him. One is his knowledge that the grounds on which to base his intervention will have to be matters of judgment rather than scientific fact. Although at first glance the planning sections of the 1976 amendments seem specific, in fact all the key terms are undefined. State plans must be based on needs analysis and provide specific courses of action that are rationalized, but the Commissioner will have to determine how much detail will constitute an "acceptable" level of specificity or explicitness, or how much of what kind of argumentation will constitute an "acceptable" rationalization of a program strategy. Annual program plans must show "progress," but the Commissioner will have to decide how much of what kinds of action will demonstrate sufficient "progress." The Commissioner is not told how to make such decisions because they are essentially matters of judgment, for which he will be held responsible. Since it is his judgment that is on the line in every potential case of intervention, a Commissioner will want to be very sure of his ground and very confident that his judgment is superior to that of the state people whose judgment he is contradicting. Moreover, since it is usually easier to judge what is bad than what is good, there will be a natural tendency to accept minimal standards without conflict rather than define criteria that might be inappropriate in other states. Because the Commissioner cannot be certain, he must be cautious.

A second set of incentives derives from the Commissioner's need to be responsive to the constituencies he serves. As a major program manager and an educational professional, the Commissioner has an interest in advancing the collective interests of constituencies that include both the older establishment and the newer groups recently favored by Congress. Advancing those interests means protecting or increasing the budget (the 1976 amendments contain authorizations for five years, but appropriations still have to be voted annually). To that end it is always useful to be able to call upon various groups for support during budget hearings, particularly before Congress. Obviously, denial of funds or other public confrontations would be difficult to reconcile with enthusiastic testimony supporting the good work being done by the Commissioner.

Finally, any experienced program administrator will understand that he/she also has a congressional constituency, organized by state as well as committee, and easily aroused against bureaucrats who threaten any reduction in federal dollars flowing to the people who elected them to office. Efforts to justify fund withdrawal by appealing to current legislative policy are seldom as persuasive as they might appear to be, in part because congressmen understand that policy may change soon, and in part because some resources badly spent can often be made to appear far better than no resources at all. A Labor Department official who threatened to withhold Comprehensive Employment Training Assistance (CETA) funds from the City of Detroit in 1976, on grounds that the city was using CETA money to rehire policemen rather than train unemployed workers, quickly discovered that his understanding of the legislation was right but his sense of politics was all wrong. Detroit's Democratic mayor used a major Republican fund-raiser and a Republican senator to intercede with a Republican President to countermand the Labor Department official, who was forced to accept the city's practices within 24 hours of the point at which he had declared them in violation of congressional intent. The bureaucrat was right about congressional intent, and right about Detroit's violation of that intent, but wrong to believe that he could withhold funds on those grounds alone. Detroit was so hard-pressed to begin with, and so obviously in need of whatever federal assistance it could find, that enforcing the clear intent of Congress had to give way before the higher political imperative (recall that this was an election year) of giving aid. Such judgments are difficult to make, but experienced administrators are "experienced" precisely because they learn when to enforce and when to look the other way. Senators and Representatives continue to profit politically from "bringing home the bacon," they continue to vote on program appropriations, and sensible administrators keep these facts in mind when formulating judgments about strict or loose enforcement.

If the Commissioner's power to withhold funds is used rarely, with great discretion, and only after careful preparation of the congressional flank, it follows that the conversion to analytic policy planning among the states will be slow and that some states probably will not approach that conversion within the time-frame of the 1976 amendments. This is not to say that the withholding authority is unimportant. States, too, have an interest in avoiding confrontation, if only to ensure an uninterrupted flow of funding, and they will go to some lengths to satisfy the Commissioner in order to avoid even the threat of funding interruption. We can therefore anticipate that most states will organize planning processes and advisory councils that will in fact represent women, postsecondary, community college, and other previously neglected groups, and that strong efforts will be made to satisfy the resource demands of these groups in order to prevent appeal to the Commissioner. When these efforts fail and appeals are made, or when the Commissioner reviews state plans, we can anticipate that the Commissioner will adopt a negotiating rather than enforcing stance, seeking to achieve improvement through reasonable compromise. As the Commissioner's staff and informational resources improve, and as he learns enough about the various state organizations to judge their levels of interest in achieving national policy goals, harder and softer stands may be possible, including a confrontation or two to establish the limits of national tolerance. Both the initial negotiating posture and the potential for later "toughness" are thus derived from the authority to withhold funds; if the Commissioner is willing to treat that authority as a bargaining resource, he may be able to negotiate considerable change in state systems of vocational education regardless of whether or not he ever uses his withholding authority. The

Commissioner is officially regarded as an "administrator," but the work he does will clearly require political skills of a high order.

Conclusion: Planning as Politics

If the federal government seeks to achieve specified program goals it has several options. One is to create an organization to carry out the defined tasks. In program areas that are national in scope or which are thought to be traditional prerogatives of the states--such as education--this option has always seemed infeasible for political and administrative reasons. A second option is to provide federal assistance to the state and local governments who actually carry out program activities. Within this option there are, in turn, a variety of ways to provide assistance. Performance of certain activities can be guaranteed by specifying the activities, setting up separate funds to support the activities, requiring applications which, if approved, constitute contractual obligations to perform the activities, and ensuring performance through post-audit procedures. These procedures roughly resemble the procedures used in the so-called categorical programs. Although likely to be effective, they require agreement on goals, which is difficult to achieve, and they are cumbersome in operation, producing a great deal of red tape. Funds can also be distributed by formula to all states, or to states that meet certain eligibility criteria, with performance of desired activities monitored by pre-funding plans or post-funding audits. Or, funds can simply be doled out to all eligible units without requirements for either planning or monitoring. The last option is seldom seen to be politically feasible, while the categorical option has lost favor recently because of the red tape involved, although it is most likely to produce the results desired by national policy makers. Formula grants with planning-monitoring requirements represent something of a middle ground: less red tape is involved but there is also less likelihood that national goals will be met. The 1976 vocational education amendments stand squarely on this middle ground.

The long-run objectives of the 1976 amendments are clearly aimed at developing vocational education programs more closely attuned to the changing needs of the labor market, but the middle ground program design seems, with equal clarity, to be based on two contradictory theories. At first glance, a planning strategy seems prominent: states are required to analyze their developing labor market needs, devise explicit and detailed strategies to meet those needs, and explicitly state reasons for those strategies. Each year, states must revise their five-year plans and show how their programs are, or are not, meeting the stated goals. Along with this planning strategy, however, the legislation requires that a large number of groups, previously uninvolved in state vocational planning, be represented in the agencies responsible for preparing and monitoring the state plans. Since the established groups control resources desired by the newly-represented groups, and since the new groups are guaranteed access to both the planning process and the Commissioner of Education if the results of that process are unsatisfactory to them, it is clear that the representational requirements will conflict with the planning requirements: established groups such as teachers of homemaking or agriculture cannot be expected to go along with "planning" analyses that show their activities and their existence to be unnecessary. The resultant disagreement over goals will undermine possibilities for "planning" and lead to frequent appeals to the Commissioner for resolution of disputes that state-wide "representative" groups cannot resolve. It is possible that established groups in some states will be able to co-opt or otherwise secure the agreement of the new groups, but that result seems unlikely at the outset.

Under what conditions is the Commissioner likely to intervene on the side of analytical "planning"? That the Commissioner will have numerous opportunities to intervene seems certain. That his interventions will have the effect of enforcing an abstract style of planning at the state level seems quite improbable. The Commissioner can, if he is dissatisfied with the plans or accountability reports, withhold funds from the unsatisfactory states, but the Commissioner's position contains strong built-in constraints against easy use of that power. The Commissioner's authority to define acceptable "planning" is ambiguous, he needs the support of as many constituency groups as possible in order to protect and develop his program, and above all he cannot afford to indiscriminately antagonize members of Congress, for whom protection of funding allocations to their statewide constituencies is and must remain a major political goal. The potential for use of the withholding power is likely to be enough, however, to induce state agencies to cooperate with the Commissioner to the extent that they can. Depending on his willingness to intervene and his bargaining skill, the Commissioner will be able to encourage improvement in the use of vocational education funds, even if he is unable to "enforce" analytic planning. Results will be uneven across the states, and it is unlikely that rational policy planning will occur any more often in this program than it has in the many other programs that have had similar hopes. But the Commissioner does have an important political resource and, to the extent that he can use that resource to become a good politician, he can be a good planner. In the American system, whether or not the Commissioner turns out to be a good "planner" in this sense is a far more important issue than whether or not he can stimulate "planning."

NOTES

[1] Advisory Commission on Intergovernmental Relations, Significant Features of Fiscal Federalism, 1976 Edition (Washington, June 1976), p.34.

[2] David B. Walker, "Categorical Grants: Some Clarifications and Continuing Concerns," Intergovernmental Perspective (Washington, ACIR) No. 3 (Spring, 1977).

[3] Carl W. Stenberg, "Block Grants: The Middlemen of the Federal Aid System," Ibid.

[4] General Revenue Sharing has generated a great deal of scholarly attention. The Brookings monitoring project has completed two volumes, Monitoring Revenue Sharing and Revenue Sharing: The Second Round, both by Richard P. Nathan and colleagues. A comprehensive evaluation can be found in F. Thomas Juster, ed., The Economic and Political Impact of General Revenue Sharing (Ann Arbor: Survey Research Center, 1977). Local program impacts are explored in Thomas J. Anton, Patrick D. Larkey and Toni Linton, Understanding the Fiscal Impact of General Revenue Sharing (Ann Arbor: Institute of Public Policy Studies, 1975).

[5] Thomas J. Anton, "Federal Assistance Programs: The Politics of System Transformation." Paper prepared for the "Urban Choice and State Power" Conference, Cornell University, June 1-4, 1977 (processed).

[6] The term is used by Stenberg, op. cit.

[7] General Accounting Office, What Is The Role of Federal Assistance for Vocational Education? (Washington, December 31, 1974).

[8] Ibid.

[9] Cited in Ibid., p.1.

[10] Ibid.

[11] For a general review and analysis of the issues, see ACIR, Improving Federal Grants Management, (Washington, February 1977), passim.

[12] House of Representatives, Committee on Education and Labor, Report No. 94-1085, 94th Congress, 2d Session, The Vocational Education and National Institute of Education Amendments of 1976, p.29.

[13] Ibid., p.28.

[14] Anton, "Federal Assistance Programs...," *op. cit*.

[15] Public Law 94-482, Oct. 12, 1976.

[16] *Ibid*. Notice, hearings, and legal appeal are provided for in the event funds are withheld.

[17] For an analysis of the LEAA experience, see ACIR, *Safe Streets Reconsidered: The Block Grant Experience 1968-1975* (Washington, January 1977).

[18] These conclusions, based in part on my review of congressional testimony (Anton, *op. cit*.), may seem harsh. In summarizing its careful examination of LEAA operations in ten states, ACIR made similar points using somewhat different wording: "None of the 10 SPA's (state planning agencies) conducts an overall comparative analysis of the problems of the total criminal justice system and directs its resources accordingly. Rarely are the criminal justice activities of state and local agencies planned and coordinated with the activities supported by the SPA's. For the most part, SPA planning in states visited is project-based and lacks a well-defined set of goals against which to measure individual projects." *Ibid., Part B, Case Studies*, p.215.

[19] House of Representatives, Subcommittee on The City of the Committee on Banking, Finance and Urban Affairs, *Toward A National Urban Policy*. (Washington, GPO, 1977), p.33.

[20] For a useful history of American planning, see Mel Scott, *American City Planning Since 1890* (Berkeley: University of California Press, 1969).

[21] Anton, *op. cit*., reviews the 701 experience.

[22] For example, see James G. Coke and Thomas J. Anton, *Planning in the Penjerdel Region* (Philadelphia: Penjerdel, Inc., 1962).

[23] Studies from which these conclusions are derived include Alan Altshuler, *The City Planning Process* (Ithaca, N.Y.: Cornell University Press, 1965); Francine F. Rabinovitz, *City Politics and Planning* (New York: Atherton Press, 1969); and Anthony J. Catanese, *Planners and Local Politics: Impossible Dreams* (Beverly Hills, Calif.: Sage Publications, 1974).

[24] General Accounting Office, *Federally Assisted Areawide Planning: Need to Simplify Policies and Practices* (Washington, 1977).

DISTRIBUTION AND ALLOCATION OF FUNDING FOR VOCATIONAL EDUCATION

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Susan Sargen

The purpose of this paper is to identify and discuss major issues concerning the distribution of vocational education funds and to support related research strategies. In the first sections of this paper general features of the system of vocational education finance and the federal role in vocational education are highlighted. The next section examines available information on the current distribution of vocational education funds and the process by which these funds are allocated. Finally, suggestions are provided for descriptive and analytical research which can help policy makers assess the success of current and alternative future schemes for financing vocational education.

General Considerations of Resource Allocation

Assessments of the distribution of vocational education funds are complicated by the need to recognize and accomodate three major features of the vocational education system: (1) decision-making authority concerning the level and distribution of vocational education funds is spread among three levels of government (federal, state, and local); (2) vocational education funds support and are allocated among a wide range of skill-developing curricula; (3) vocational education programs can be provided by a variety of public and private organizations. Issues concerning the distribution and impact of vocational education funds have been raised in each of these areas, and the interdependencies of the various decisions are quite clear.

It is important to be specific as to the distributional dimensions at issue and the specific goals against which distributional patterns are being assessed. More generally, it is important to identify and distinguish resource allocation goals which focus on the pattern of resource use within the school system from those goals concerned with educational or employment outcomes. Within the context of federal vocational education programs, these allocative objectives include allocating funds for specified types of students, curriculum services, and educational units. Separate information about these distributional effects of the vocational educational program is required for intelligent

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policy making. As Barro has argued,

> The best-designed educational treatment can have no beneficial effect unless the means are available to ensure its implementation at the local level. Under our federal system, these means consist mainly of the provisions of aid legislation that direct resources to the intended places, pupils, and activities. . .
>
> Moreover, findings about achievement of the educational performance goals cannot be interpreted properly in the absence of information on the allocative effects of the Federal grant programs. To illustrate with an extreme case, a finding of "no significant effect" on pupil performance would be entirely reasonable if it were discovered, in analyzing the allocative effects of a Federal grant program, that the resources earmarked for special services to certain pupils were actually being diverted to other uses or substituted for state or local revenue.[1]

Unfortunately, these research issues have received surprisingly little attention in the vast literature related to vocational education.[2] The lack of systematic analyses concerning the distribution of vocational education funds and the effects of federal vocational education grants on state and local expenditure patterns greatly hinders decision making in these areas.

The Federal Role in Vocational Education

The vocational education program occupies an important and almost unique position among major federal education efforts. The program is currently the third largest program of federal support for education with appropriations over $570 million in Fiscal Year 1977, and is one of the few programs to be targeted for the most part toward the secondary-school population. Moreover, the program is state discretionary: the federal program controls the grant distribution only to the state level, and the states then determine the proper further allocation of funds across districts and curricula within the state, subject only to a few federal restrictions concerning matching state and local expenditures and set-asides for specific target populations.[3]

Historically the federal government has played a crucial role in the development of vocational education programs and policies. The Smith-Hughes Act of 1917, by first providing federal aid for vocational education in public secondary schools, significantly increased the number of programs and students served: in 1960 almost four million students participated in these programs compared with 160,000 students in 1918. These early programs were narrowly defined as courses of instruction to develop skills for specific occupations so as to make vocational education distinct from general education. The passage of the Vocational Education Act of 1963 further stimulated the expansion of vocational education by substantially increasing federal funds for vocational education and broadening its focus to include goals related to the development of human resources and long-term employment. As programs expanded to more classes of people and broader categories of program offerings, the goals and structure of vocational education moved closer to those of general education. The 1968 Vocational Education Amendments continued the expanded funding and the emphasis on serving the needs of students with specific set-aside provisions for the disadvantaged, postsecondary vocational education, and the handicapped.

In recent years, however, serious questions have been raised as to the effectiveness of the present vocational education grant structure in achieving its purpose of "stimulating" and "encouraging" state and local allocations for vocational education beyond the level that would have been undertaken in the absence of the federal aid. State and local education agencies currently average more than six dollars of spending on vocational education for every federal dollar received. In programs for the disadvantaged and the handicapped, however, this ratio is significantly lower--2:1 and 1:1 respectively. Thus, at present it appears that the federal vocational education dollars have some impact on programs for the disadvantaged and handicapped but that impact on the remainder of the programs is negligible. That is, these federal dollars are not likely to produce allocations that differ from those that would result from an equal amount of general aid.

In addition, questions have been raised about the lack of federal influence on the distribution of vocational education funds beyond the state level. Once allocated to the states, federal funds are commingled with state and local funds,so that intrastate allocations to substate jurisdictions and across curricula are left to the discretion of state policy makers. Concern has been expressed that state allocations may not be consistent with possible federal priorities for helping districts and student populations with the greatest need. Uneven patterns of growth in vocational education among the states, discouraging enrollment patterns for disadvantaged and handicapped students, and questionable relationships between allocations to vocational education curricula and local circumstances and employment opportunities all indicate potentially serious problems in the present distribution of vocational education funds.

The Current Distribution of Vocational Education Funds

While the problems can be simple stated, analysis of the distribution of vocational education funds is quite complicated. To begin with, there are no explicitly stated and agreed-upon distributional goals for vocational education, although the specific set-asides for programs for the disadvantaged, handicapped, and postsecondary/adult populations (20, 10, and 15 percent respectively) indicate a federal priority for including and providing better services to these special-need student populations. Since 1968, traditional vocational education policy has changed so that states can no longer allocate federal vocational education funds to local education agencies on a uniform basis. Rather, state policies and systems of allocating these federal funds must give consideration to manpower needs, vocational education needs of the district, the relative ability of districts to pay, and excess costs. These criteria are not specific, however, and many questions arise as states define and combine these criteria. For example:

1. There is no single measure of district fiscal need or ability to pay, and different districts will be identified as needy depending upon the measure employed.

2. Manpower needs can be defined on a local, regional, or national basis, with different consequences for vocational education services and distribution.

3. Vocational education needs can be defined as a simple enumeration of regular, handicapped, and disadvantaged students, or they might also take into account such factors as the minority composition of the student population, dropout rates, and unemployment and work force composition in the district.

4. A wide variety of definitions and methods can be used to estimate excess costs associated with vocational education programs.

Given the subjectivity and flexibility in these distributional criteria, it is not surprising that state allocation methods vary greatly. Lindman and Buchin reviewed state plans for 15 states at the beginning of the decade and categorized ways in which the various criteria are operationalized.[4] At that time 4 of the 15 states used formula systems which attempted to quantify the allocation criteria into objective data for each local educational agency. Formula components such as ADA in vocational and nonvocational courses, a relative measure of unemployment in the district's area, property wealth, and the cost of the local vocational education program were combined in different ways by the states to distribute vocational education funds. The remaining 11 states used a far more subjective ranking system for allocating funds, again with variations in weighting and combining various criteria.

There appears to be no systematic description or analysis of state allocation methods in more recent years, although individual states have made major assessments of and improvements in their processes for allocating vocational education funds. In particular, many states have reviewed the distribution of vocational education funding as a part of the planning and implementation of general school finance reform. In this context, several states have used weighted student formula allocations for vocational education such as those developed under the auspices of the National Education Finance Project (NEFP). Weights for the various vocational education programs are derived by examining cost differences between general education and exemplary programs in vocational education.[5]

Empirical studies of the distribution of vocational education dollars are also fragmentary and insufficient to analyze these issues. A study by the Department of Health, Education, and Welfare analyzes the fiscal effects of federal vocational aid for school year 1969-70 using the nationwide ELSEGIS sample of school districts.[6] As reported in Table 1, federal vocational funds are generally spread thinly across all types of districts but tend to be somewhat concentrated in districts with median family income in the lowest quartile range in all regions but the West. Central city districts receive, on average, more dollars per pupil in all regions but the South, where rural districts average the largest per pupil expenditures. In all areas, suburban districts report the lowest per-pupil federal vocational education dollars, and average per-pupil vocational education dollars increase as property valuation per pupil increases. Table 2 from this study contrasts the pattern of vocational education aid with that of other major federal programs aiding education.

No update of this study is available for current years, nor are systematic statistics comparing the distribution of total vocational education dollars (from federal, state, and local sources) across school districts of various circumstances readily available. The characteristics of the vocational education student population cannot be related to district characteristics or state funding patterns. National data which are available suggest that more attention to current distributional practices is necessary. For example, the Project Baseline Report indicated that the percentages of disadvantaged and handicapped students in vocational education had declined in recent years, as had enrollments in cooperative and work study programs between 1973-74 and 1974-75.[7] More generally, uneven growth variations among the states puzzle vocational educators and linkages between vocational educational program distributions and labor market conditions are not always clear.

Research Directions

In addition to continued emphasis on set-asides for special populations, the federal government has sought to deal with these problems

TABLE 1

Average Federal Expenditures for Vocational Education by Type of District and Region, 1970 (dollars per pupil)

District classification	National	Northeast	South	Midwest	West
Median family income:					
Low, 25%	4.3	2.5	8.2	4.5	2.6
Middle, 50%	3.1	1.8	4.6	3.5	2.8
High, 25%	2.0	0.6	3.2	2.4	1.7
Average	3.2	1.6	5.1	3.5	2.5
Equalized property value per ADA:					
Low, 25%	2.5	1.2	4.9	2.3	2.0
Middle, 50%	3.1	1.4	5.5	3.3	2.3
High, 25%	3.3	2.3	3.5	4.3	2.8
Average	3.0	1.6	4.9	3.3	2.3
Degree of urbanization:					
Center city	4.0	3.4	4.9	5.0	3.2
Largest central city	3.9	3.5	4.5	5.2	2.6
Suburban[a]	2.0	0.9	3.7	2.2	1.7
Non-metropolitan[b]	4.0	1.5	6.0	3.9	2.7
Average	3.2	1.6	5.1	3.5	2.5

SOURCE: Alan L. Ginsburg, Patterns of Federal Aid to School Districts (Office of the Assistant Secretary for Planning and Education, DHEW, February 1975).

[a] Includes all non-center-city metropolitan areas.

[b] Includes rural and all other non-metropolitan areas.

TABLE 2

Federal Expenditures on Education
(dollars per pupil)

						State discretionary										
							All other									
		SAFA[a]														
Category	Title I ESEA	874A	874B	Other	Total	Voc. ed.	Title II ESEA	Title III ESEA	Title III NDEA	Title V-A NDEA	Total	Total	All other	Total fed. educ.	School lunch	Total fed. educ.+ school lunch
Median family income of district:																
Low, 25%	39.91	4.06	4.90	0.69	9.65	4.34	0.74	1.90	1.04	0.18	3.86	8.21	12.00	69.77	11.09	80.86
Middle, 50%	22.84	1.65	7.75	0.91	10.31	3.14	0.85	2.46	1.03	0.18	4.52	7.65	10.40	51.21	7.96	59.17
High, 25%	8.20	0.67	7.56	1.19	9.41	1.98	0.77	2.02	0.98	0.21	3.98	5.96	5.01	28.59	6.45	35.03
Average	23.45	2.01	6.99	0.92	9.92	3.15	0.80	2.21	1.02	0.19	4.22	7.37	9.45	50.19	8.37	58.56
Equalized property value per ADA:																
Low, 25%	22.91	5.01	9.00	1.84	15.85	2.54	0.84	1.55	1.09	0.19	3.66	6.20	8.05	53.01	8.86	61.87
Middle, 50%	21.92	0.69	7.20	0.81	8.70	3.05	0.86	2.41	0.95	0.17	4.39	7.44	9.83	47.89	7.98	55.87
High, 25%	24.21	0.58	5.04	0.32	5.94	3.25	0.64	2.35	1.04	0.20	4.22	7.47	10.35	47.97	8.01	55.98
Average	22.74	1.74	7.11	0.95	9.80	2.97	0.80	2.18	1.01	0.18	4.17	7.14	9.52	49.19	8.20	57.40
Degree of urbanization:																
Center city	32.59	0.84	7.66	0.75	9.24	3.95	0.96	3.22	0.96	0.17	5.31	9.26	16.95	69.04	7.69	75.73
Largest central city	41.90	0.25	5.68	0.77	6.70	3.85	1.13	3.41	0.88	0.15	5.57	9.42	18.59	76.71	6.02	82.63
Suburban[b]	10.96	2.91	8.28	1.11	12.30	1.95	0.78	1.62	0.96	0.19	3.56	5.50	5.57	34.33	6.44	40.77
Non-metropolitan[c]	31.67	1.79	4.96	0.83	7.58	4.00	0.71	2.17	1.14	0.20	4.21	8.21	8.59	56.06	11.17	67.23
Average	23.45	2.01	6.99	0.92	9.92	3.15	0.80	2.21	1.02	0.19	4.22	7.37	9.45	50.19	8.37	58.56

SOURCE: Ginsburg, Patterns of Federal Aid to School Districts, 1975.

[a] SAFA: School Assistance for Federally Impacted Area.
[b] Includes all non-center-city metropolitan areas.
[c] Includes rural and all other non-metropolitan areas.

by focusing on the planning and decision-making processes--in particular attempting to insure that those who might benefit from vocational education programs have ample opportunity to influence decisions about them. In this context, little attention is given to the integration of planning with evaluation of current programs. Moreover, it appears that current funding efforts could be developing without sufficient attention to substantive planning and evaluation of the resulting distribution of programs and their impact on various student populations. If so, policy will continue to be developed in the absence of an understanding of the features of the current and alternative schemes for distributing vocational education funds and their likely consequences.

Considerable effort is required to mount a comprehensive analysis of vocational education programs and in particular to evaluate alternative schemes for financing and distributing funds for vocational education. Suggested research areas are described below.

Rethinking the federal role in vocational education. Given the many issues surrounding the current system for financing vocational education, careful attention must be given to determining the desired federal role in vocational education and associated distributional goals. More generally, however, consideration must first be given to defining a federal role in secondary education and then determining the place of vocational education in this strategy.[8]

In this context, alternative federal strategies for secondary education must be formulated and assessed. Possible options would include concentrating funding on programs for the disadvantaged which can coordinate and expand the heavy emphasis on Title I in the elementary grades; supporting and encouraging programs assuring competence in basic skills; assuring a broad "career" education program for all students; providing specific training oriented to available job opportunities; or providing general aid. Once these priorities and corresponding target student populations and curricula are decided, the ways in which these programs are to interact with state and local programs and equalization efforts must also be considered in designing the system for distributing federal vocational education aid.

Distribution of funds. Once the priorities are identified, the current and alternative distributional schemes for vocational education can be assessed against these goals. In order to monitor and evaluate the success of distribution schemes, one kind of study which could be carried out would simply involve detailed documentation of the distribution of funds across individual school districts. At one level this analysis could simply document formal methods used across states for allocating funds to districts (e.g., this approach would involve examination of weighting schemes and formulas for distributing funds). In the final analysis, however, examination of the actual distribution of revenues for vocational education should be carried out. Of particular interest would be the distribution of funds to districts according to the financial and demographic characteristics of the pupil populations they serve, and more specifically, of the pupils enrolled directly in vocational education programs within those districts.

Given the current pressures for school finance reform which are sweeping the states, it would also be important to analyze the possible interactions of vocational education funds with efforts at equalization. To what extent have funds reinforced or mitigated efforts at equalizing the distribution of school spending across districts within states? Are state equalization goals and corresponding allocations considered in the light of federal priorities?

Allocation of funds. Given the distribution of vocational funds, it is also important to examine the allocation of funds to programs and school inputs. Clearly, these data will be indicative of the nature of the services being delivered to children. Specifically, such an investigation would focus on the nature of the vocational education curricula offered, the combinations of course offerings, and the distribution of these curriculum offerings across school districts classified according to pupil characteristics. What kinds of programs tend to be concentrated in areas with pupils of high need? How well do they correspond with area job opportunities? For example, almost one-third of the secondary pupils enrolled in vocational education were in home economics programs not oriented to gainful employment.[9] One has to ask what the components of such a program are and what the distribution is across districts according to need characteristics of pupils. One can envision certain kinds of programs in home economics (e.g., consumer information programs oriented toward improving consumer decisions in the market) as being very valuable for relatively disadvantaged pupils who are not likely to receive such training at home. The question becomes one of the distribution of such programs and enrollments across districts.

In addition to examining the variation in program offerings, it would be of value to document the different combinations of school inputs (e.g., teachers, instructional materials, and capital equipment) used for the various kinds of vocational education programs. For example, it was reported[10] that approximately 18 percent of expenditures on vocational education programs were used for instructional equipment and supplies. But clearly, this will vary considerably among such programs as distributive education versus technical or trades and industry. Such information would be of value in assessing possible differences in program costs.

Better methods for determining program costs are needed. The study under the auspices of the National Educational Finance Project cited earlier has suggested that one method of arriving at weights for vocational education programs is to examine cost differences between general education and exemplary programs in vocational education.[11]

Clearly, with all of the difficulties in assessing the outcomes and technologies of the educational process, this information on current practice is useful to current school administrators and even to higher level educational policy makers. However, this approach clearly involves some a priori definition of an "exemplary" program.

An alternative and perhaps supplementary approach to assessing cost differentials is to examine the systematic behavior of school districts in allocating budgets among school inputs. That is, school officials probably have some reasonably good perceptions of the differences in the combination of school inputs required to provide alternative kinds of educational programs. Hence, one way to develop some inferences is to examine systematic variations in the employment of certain school inputs (e.g., teachers per pupil, teacher characteristics, instructional materials, and capital equipment) in response to variations in the enrollment levels of students in certain kinds of programs ceteris paribus. Useful information can be derived from such analysis and perhaps combined with the NEFP approach to yield data for determining appropriate weightings for various kinds of educational programs.[12]

Ultimately, if weighting structures are seen as a viable alternative for distributing vocational education funds, it seems as though one should move beyond the level of analysis implied by the NEFP and the behavioral approach to define goals and objectives for various school programs and to allocate resources and determine educational needs and costs based on outcomes, whether educational achievement (as would be the case in general education programs), increased earnings, or improved job opportunities.

Unfortunately, no matter how the weighting structure is determined there are some problems and issues which must be addressed. First, weighting students according to the programs or courses in which they enroll creates incentives for local school administrators to encourage enrollment of students in high-cost programs. There are two reasons why this may occur. One circumstance will be in the case where pupil weightings determined by state policy makers overestimate the perceived costs of the programs to local administrators. In this case, either higher "quality" programs will be offered or the excess funds will be diverted to other programs. Secondly, to the extent that strict allocation of funds is not monitored by the state, districts will be able to receive funds for one program and divert the funding to the programs which may have higher priority locally. This will tend to have the effect of reducing the quality of the funded programs. A second basic problem with weighting is that it ignores student characteristics: a weighting structure is indifferent to the types of students enrolling in vocational education programs. If the goal of these programs is to give high priority to students with special needs, then the weighting approach may not tend to achieve that goal. Finally, and not unrelated to the last issue, weighting structures, by ignoring pupil characteristics, may well provide a means for districts to get around the efforts to equalize educational spending by developing, and encouraging enrollment allocation to, programs which will draw additional funds into the district.

Targeting funds to pupils. Given the particular federal emphasis on targeting vocational education funds to specific pupil populations, one alternative that might also be considered involves a voucher scheme. Thus far, recommendations seem to focus on developing distribution formulas directed toward channeling funds to school districts that have higher concentrations of disadvantaged or handicapped pupils. Alternatively, we could think of redistribution of funds directly to students with special needs and providing them with program choices.

The advantage of such an approach is that we could ensure that the funds would go directly to the target populations. Moreover, it is hoped that this approach might stimulate some competition among local agencies which currently provides vocational education programs, whether they be public high schools, community colleges, other public agencies (e.g., manpower skills centers) or private vocational schools. Moreover, this kind of competition might even stimulate some of the sought-after coordination and interaction between or among private and public agencies offering such programs.

Clearly, one important aspect of this approach would involve the establishment of information centers (perhaps within local public schools or other public agencies) to help counsel students regarding the choice of programs and institutions. Standards of accreditation would have to be established and fulfillment of those standards would have to be monitored by the state. It is hoped that establishing such standards and providing for the monitoring of school activities would reduce the incidence of fraud and misrepresentation which some have suggested characterizes the private market for vocational education.

NOTES

[1] Stephen M. Barros, Federal Education Goals and Policy Instruments: an Assessment of the "Strings" Attached to Categorical Grants in Education (A Working Note prepared for the Department of Health, Education, and Welfare, by Rand Corporation, Santa Monica, Calif., February 1977), pp. 6-7.

[2] For example, a search of ERIC files identified over 8,000 references on vocational education but only a small portion (considerably less than one percent) on topics related to the distribution of vocational education funds.

[3] The LEAs are required to match federal dollars with state and local funds on a 1:1 basis. Until the 1976 amendments to the Vocational Education Act, there was no matching requirement for specific set-asides for the disadvantaged and the handicapped.

[4] Erick L. Lindman and Arthur Buchin, "Financing Vocational Education in Public Schools," Planning to Finance Education (National Educational Finance Project, Vol. 3; Gainesville, Fla.,1971). The states included in the study are California, Colorado, Florida, Illinois, Michigan, Minnesota, New Hampshire, New York, Ohio, Oregon, Tennessee, Texas, Utah, Washington, and Wisconsin.

[5] Erick L. Lindman, Financing Vocational Education in the Public Schools (National Education Finance Project, Special Study No. 4. Graduate School of Education, University of California, Los Angeles, 1970).

[6] Alan L. Ginsburg, Patterns of Federal Aid to School Districts (Office of the Assistant Secretary for Planning and Education, DHEW, February 1975). This data base combines statistics from the 1969 Elementary and Secondary Education General Information Survey (ELSEGIS), the 1970 Census, and a special study of school district property tax bases by the National Planning Association.

[7] Arthur M. Lee et al., Learning a Living Across the Nation, Vol. V. Project Baseline Fifth National Report, Part I: Narrative Report (Flagstaff: Northern Arizona University, November 1976) pp. 9-11, 16.

[8] There is often a tendency in the vocational education literature to use the reverse logic.

[9] Comptroller General of the United States, General Accounting Office, *What is the Role of Federal Assistance for Vocational Education? A Report to the Congress* (Washington, D.C.: U.S. Government Printing Office, 1975).

[10] *Ibid*.

[11] Lindman, *Financing Vocational Education in the Public Schools*, 1975.

[12] For a discussion of this approach as applied to pupil need (disadvantaged and/or handicapped pupils), see Jay G. Chambers, "School District Behavior, Markets for Educational Resources, and the Implications for Public Policy: A Survey," forthcoming in Douglas Windham, ed., *Economic Contributions to Education*, to be published by the National Academy of Education.

FEDERAL AND STATE GOVERNANCE OF VOCATIONAL EDUCATION: ITS RELATION TO COMPLIANCE WITH FEDERAL RULES AND REGULATIONS

Don K. Gentry

Knowledge of the vocational education governance structures is fundamental to an understanding of compliance issues and an appreciation of the variations in the ways states comply with federal mandates. The issue of governance has been a continuing area of concern among vocational educators at the federal and state levels for the past decade and a half. Since the Vocational Education Act of 1963 called for the creation of a single state agency to administer or supervise the operation of vocational education, state and federal agencies have struggled with the implementation of that mandate.

This paper will provide background information on the historical development of and present governance patterns for administering vocational education. Four major areas of concern related to these governance structures with implications for compliance will be discussed.

An Overview of Governance

Since the beginning of Federal involvement in vocational education under the Smith-Hughes Act of 1917, the states and the federal government have worked in partnership to provide vocational education opportunities for the American people. This relationship has existed as a unique arrangement between the states, which have the constitutional responsibility to provide public education, and the federal government, which has served as the initiator of improved vocational education from a national persepctive.

Two fundamental concepts pertaining to governance emerged in the initial legislation. Recognizing the constitutional role of the states, Congress in 1917 elected to establish a federal vocational education initiative through the state public education systems and this early legislation called for a single agency in each state to manage the vocational education enterprise. These two decisions established the public education system of the states as the sole agency responsible for vocational education. While having the advantage of assuring vocationalism a place in the education system, these decisions also assured that there would be considerable variation in the means by which states would comply with federal initiatives.

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As of 1972, four basic governance structures were used by the states to meet the federal mandate that a single state agency be responsible for the administration of vocational education:

1. A state board of education primarily responsible for elementary and secondary education.
2. A state board or commission for higher education.
3. A state board with jurisdiction over all levels of education.
4. A state board separate from the elementary/secondary and higher education boards.

The typical structure at that time was to place the responsibility for vocational education within the state education agency primarily in charge of elementary and secondary education (Pierce, 1973). The dominance of this particular structure seems to be related to the historical development of educational management. Since the Tenth Amendment to the U.S. Constitution gave the power for providing education to the states, all state constitutions have provided for the creation of a state common or public school system. And, since the vocational education programs were operated as part of the public school system prior to 1963, most states have maintained their governance of vocational education in the state department in charge of public schools. This structure responded well to the federal intitiatives, since all federal legislation concerning vocational education prior to 1963 provided for primarily secondary and adult levels, both of which historically have been functions of the public schools.

With the strong intitiative of the Vocational Education Act of 1963 for postsecondary-level instruction, that area of vocational education expanded greatly. This expansion accompanied the national interest in the community/junior college movement. Departments of education in many states, in an attempt to respond to this challenge, developed coordinating councils or commissions for higher education during the 1960's and early 1970's. Expansion of postsecondary programs and the mandates of federal legislation were key factors prompting the modification of vocational education governance structures.

Some other factors that affected the structure of vocational education at the state level were (1) the organization of the total education system of the state; (2) the historical development of education and vocational education in the state; and (3) the role played by the state legislature and other political entities within the state.

Although the structure for the administration of vocational education at the state level is varied, there are some commonalities among the states that are mandated by federal law. Some of these are as follows: (1) each state must designate or create a sole state agency for the administration of vocational education or for the supervision of administration by eligible recipients; (2) each state must have a full-time state director of vocational education and sufficient staff to perform the responsibilities as assigned by federal law; (3) each state must provide programs at the high school, postsecondary, and adult levels as well as programs and services for special target groups (i.e., the disadvantaged and handicapped); and (4) each state must carry out certain functions like planning, evaluation, data collection, and the use of advisory committees. All of these commonalities imposed by federal legislation have had an impact on the structure and organization of vocational education at the state level.

Even with these commonalities, however, no two states have exactly the same structures, scope of work, distribution of responsibilities, or organization. Given these differences, the discussion of state governance structures for vocational education must be fairly general.

The most recent research (Gentry, 1975) identified four types of state governance structures, which parallelled the observations of Pierce in 1973. The following list shows the classification of 53 states and territories by governance type. (Asterisks indicate states reporting postsecondary or community college programs under the board's authority.)

1. State elementary/secondary board (35 states):

*Alabama
Alaska
Arizona
Arkansas
California
Connecticut
Delaware
*Georgia
Illinois
Iowa
Kansas
Kentucky
Louisiana
Maine
Maryland
*Michigan
*Minnesota
Mississippi
Missouri
Montana
Nebraska
Nevada
*New Hampshire
New Jersey
New Mexico
North Carolina
Ohio
Oregon
South Carolina
South Dakota
Tennessee
Texas
Vermont
Virginia
West Virginia

2. State higher education board (2 states):

Hawaii
American Samoa

3. State board with jurisdication over all levels of education (8 states):

Florida
Idaho
New York
Pennsylvania
Rhode Island
Trust Territory
Utah
Wyoming

4. Separate state board for vocational education (8 states):

Colorado
Indiana
Puerto Rico
Oklahoma
North Dakota
Wisconsin
Virgin Islands
Washington

The system under which the state board of education serves as the state board of vocational education has persisted as the dominant governance structure. It should be noted, however, that several states may have reorganized their governance plan as a result of the Education Amendments of 1976.

Little evidence exists to support the strength of any one governance structure over the other three. According to Pierce (1973), although opinions are expressed in the area of governance, little evidence actually exists of the effectiveness and efficiency of the various approaches.

In addition, the differences among states even within one of the four categories are large. These observations lead essentially to the conclusion that the administrative structures across the nation have developed in such complexity that the sole state agency called for in federal legislation is virtually indescribable (Gentry, 1975).

Governance Patterns and Problems of Compliance

Four major areas of concern are directly related to the governance patterns and to the question of states' compliance with federal mandates. These areas are (1) variations in the composition of the governing board and the board's executive officer, (2) organizational structures and staff expertise, (3) scope of jurisdiction of the several vocational education enterprises, and (4) the functions and services mandated in federal legislation.

Composition of the board and executive officers. Many variations occur in the organization of the state board for vocational education. Some boards are elected by the people, some are appointed by the governors, and some are elected by the legislatures. The length of term for state board members varies from three years in Delaware to 15 in New York (Harris, 1973). State boards also vary in number of members and their representation. Some state laws designate specifically who the various board members will represent, other board members represent districts or regions of the state, and still others have no specific designation.

Another difference in organization appears in the make-up of board officers. According to a 1975 survey, the state board executive officers were made up of 11 state directors of vocational education, 30 chief state school officers, 11 commissioners of education for elementary, secondary, and higher education, and one president of the state's university system.

The chairmanship of the state boards for vocational education also showed considerable variety. With 51 of the 53 states and territories reporting, Gentry (1975) found that 11 of the board chairmen were appointed by the governor, 4 were chief state school officers, 35 were elected from the membership of the board, and one chairmanship alternated annually between the state superintendent of public instruction and the commissioner for higher education. The variety in the organization of the board increases the already large differences in the governance structures and organization of vocational education in the states.

What is the significance of these variations in board chairmanship, membership affiliation, position of the state director in the administrative hierarchy, and terms of the board's membership? Little or no research has been conducted to measure the impact of these factors; one can postulate, however, that important variations in compliance result from these differences. Two problems in particular come to mind: (1) the agenda priorities that each of these members and executive officers brings to the board and (2) the relative position of vocational education policy matters on the board's agenda.

The priorities that board members and executive personnel bring to board meetings can have a large effect on the problems considered and the decisions made. In systems where representation is the basis for membership, one can assume that decisions and policies will be molded in large measure by the constituents of or views held by the executive officer and board members. These priority concerns may not parallel closely or represent inclusively the federal initiatives for program development. Therefore, although in compliance with the law and the rules and regulations in the narrow sense, the members may not have sufficient interest in the federal initiatives to provide needed state leadership.

The scope of the governing board's authority may extend to management of other programs besides vocational education. For example, a state board of education must be concerned with matters of elementary and secondary education. In other states, boards are concerned only with vocational education programs. Given the limited time boards have for decisionmaking and the wide range of urgent problems the former kind of boards must consider, it is likely that the problems and information dealt with will vary greatly. Probably those boards with a comprehensive jurisdiction will consider major policy matters only, leaving wide latitude to the executive officer to form policy and to make critical operational decisions. Conversely, the board with solely vocational education matters to consider will exert its leadership in a number of operational decisions. Thus, the position of the vocational education system in the educational hierarchy may affect the nature and magnitude of decisions involving a state's compliance with the federal initiatives.

Swanson (1967) reported that the position of responsibility of the State Director of Vocational Education to the State Board for Vocational Education has an impact on the governance of vocational education. In the states where the state director reported directly to the state board, there was a greater emphasis placed on adult than on secondary vocational education programs. He found that 9 (18 percent) of the state directors reported directly to the state board for vocational education, 23 (46 percent) reported through a chief state school officer, and 18 (36 percent) reported through one or more deputy or assistant superintendents. The position of the state director in the administrative organization also seems to affect the policy-making level of the administrative structure. The further removed the state director is from the board, the more responsibility for policy decisions rests with the director or staff and the fewer policy matters are considered by the state board.

Certainly, there is insufficient evidence to contend that major compliance problems are the result of the variation in board membership, length of term, selection process or position of the executive officer, or the relationship of the board to the educational governance system. It is reasonable to suspect, however, that variations in the states' compliance with the federal initiative are associated with these factors.

Organization structures and staff expertise. Prior to the Vocational Education Act of 1963, most state staffs were organized around disciplines or service areas in vocational education, such as agriculture, industrial education, home economics, and distributive education. The emphasis change in the 1963 Act from programs to serving special target groups of people brought about a change in staffing patterns at the state level.

Many other factors affect the size and organization pattern of staff in the state vocational education agency. Some of these are (1) size of the state, (2) number and type of institutions providing vocational education, (3) relationship with other state agencies, (4) relationship with other divisions within the agency, and (5) the desires of the state legislature.

In 1975, 13 state boards employed separate staffs for vocational education and 40 state staffs were drawn from the staffs of the state department of education (Gentry, 1975).

Staffing patterns are now beginning to be organized around the functions of the agency and the target populations to be served. The following examples of staffing patterns will show the trend toward functional versus program organization. Figure 1 shows a traditional staffing pattern, typical prior to 1963. In this organization, individual program areas covered the entire scope of activities performed for that program with very little coordination with the other program areas.

Figure 2 shows a typical staff organization used by many states in the early 1960's to implement the expanded responsibilities assigned under new federal legislation. Some coordination between units was possible with program-service functions being separate from the other administrative functions.

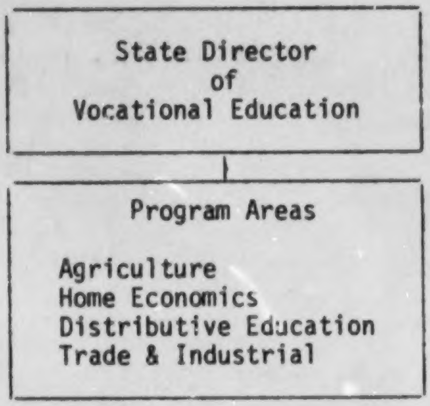
State Director
of
Vocational Education
Program Areas
Agriculture
Home Economics
Distributive Education
Trade & Industrial

Fig. 1. Typical state organizational structure for vocational education prior to 1963.

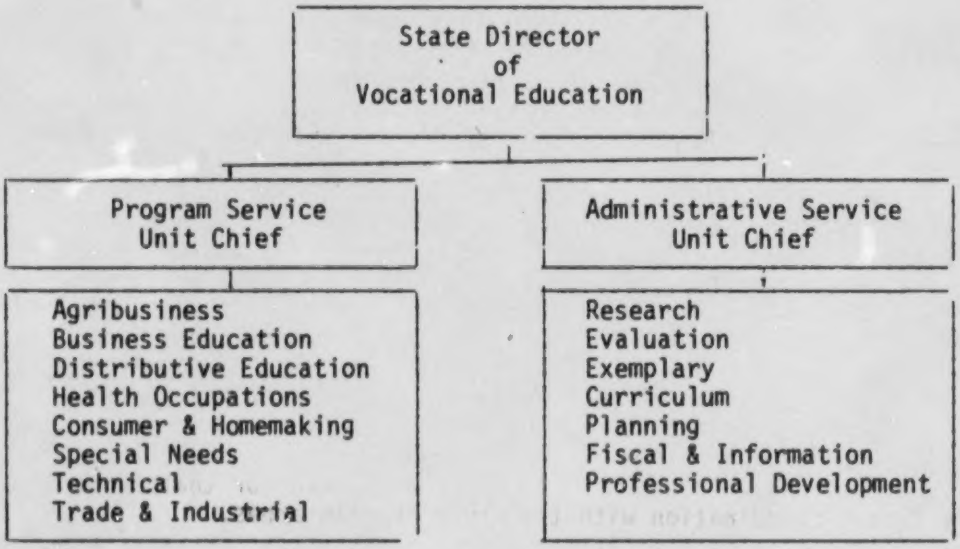
State Director
of
Vocational Education
Program Service
Unit Chief
Agribusiness
Business Education
Distributive Education
Health Occupations
Consumer & Homemaking
Special Needs
Technical
Trade & Industrial
Administrative Service
Unit Chief
Research
Evaluation
Exemplary
Curriculum
Planning
Fiscal & Information
Professional Development

Fig. 2. Typical state organizational structure for vocational education resulting from the Vocational Education Act of 1963 and Education Amendments of 1968.

Figure 3 shows a staffing pattern that is more broadly representative of a functional organization. This plan is not intended to be ideal but to exhibit the trend of the late 1970's under the Vocational Education Amendments of 1976.

Why is staffing a critical concern for the issue of compliance? Several factors seem to contribute: (1) the probable lag resulting from a state's accomodation to the federal mandates, (2) the expertise of existing staff, and (3) the desire and capacity of states to reorganize their governance structure.

An examination of federal laws for vocational education reveals substantial changes in the types of federal initiatives. Clearly, the legislation since 1963 has considerably overhauled the states' vocational education roles. The rate at which this change occurred has had a dramatic effect on the states' governance structures and their ability to comply with the federal mandates. To go from coordinating program areas to planning and evaluating programs in relationship to specified target populations is a substantial change in the states' mission. While strict compliance with the law can be achieved by realignment of staff and specification of necessary duties, the real impact resulting from the federal initiatives cannot be achieved without wide acceptance of the new goals, careful planning and the building of staff capacity to carry out the mission. It requires considerable time to extend the capacity of the staff to this new level. The net effect is a serious lag between the time when compliance is to occur and the time when the impact of this compliance is realized at the local level.

Second, the number and expertise of staff needed within the governance structure to carry out the federal and state initiatives is largely related to the goals of the agency. When these goals are altered, critical changes must be made. Two factors in particular inhibit the rate at which these changes can occur. First, since most governance structures are encompassed within the state's bureaucratic systems, employees are protected against the events resulting from rapid change. Second, the staff currently carrying out the agency's goals were brought to the agency because of their expertise and they must acquire new skills and assimilate the agency's new mission. These two factors combine to slow down efforts to achieve full compliance with the intent of the federal initiative.

Finally, a number of critical decisions must be made by the governing agency to implement its programs. The staff realignment process is clearly related to the type of governance structure and can dramatically affect impact of compliance. An example will help to clarify this point. The position of the sex fairness coordinator in the governance structure can have a major impact on vocational education. Within a system where the staff is aligned with the elementary and secondary staff, the sex fairness coordinator may be assigned to the office of the department concerned with the enforcement of Title IX. A person in this position may have a radically different impact on vocational education programs than one assigned to the office concerned with vocational education program operation where the office's concerns relate primarily to program planning.

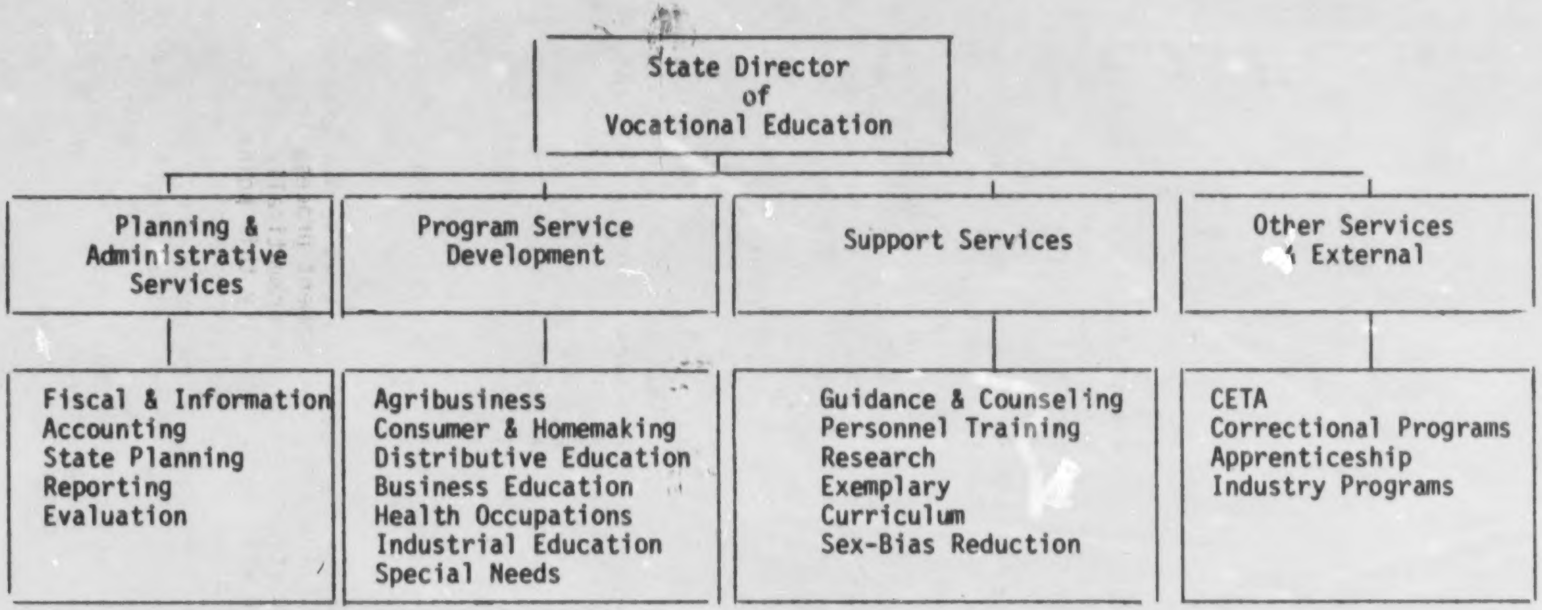
State Director of Vocational Education
Planning & Administrative Services
Program Service Development
Support Services
Other Services & External
Fiscal & Information
Accounting
State Planning
Reporting
Evaluation
Agribusiness
Consumer & Homemaking
Distributive Education
Business Education
Health Occupations
Industrial Education
Special Needs
Guidance & Counseling
Personnel Training
Research
Exemplary
Curriculum
Sex-Bias Reduction
CETA
Correctional Programs
Apprenticeship
Industry Programs

Fig. 3. Typical state organizational structure for vocational education resulting from Education Amendments of 1976.

The expertise of the staff, the administrative organization necessary to carry out the agencies' goals and the time required to alter the governance structure may all have a critical effect on the state's ability to comply with federal mandates. Although strict compliance with the law can occur by the internal alteration required for the state plan, the fundamental changes required need sufficient time for staff to gain needed expertise and for organizational structures to be tested.

Scope of jurisdiction. Most of the state administrative structures were created in the early 1900's and have changed very little since, other than in staffing patterns. Vocational education programs, however, have changed vastly since the passge of the 1963 Vocational Education Act. The switch from program-oriented to people-oriented activities was the major change that came about in 1963. Many additional functions and levels of education were included in the vocational education system. With this great expansion and the movement of vocational education from primarily a function of secondary education to all levels through the associate degree, many questions on the governance structures have arisen.

Can a board of education primarily responsible for elementary and secondary education establish proper relationships with other state agencies administering other levels of vocational education? For example, the operation of public school programs and postsecondary programs is administered in most states by two separate boards; yet the Vocational Education Act and Amendments call for coordinated program planning and require consideration of specific funding. While many states essentially contract between boards for program service, there is a critical concern for optimal program planning and operation under such a plan.

A second question to be explored is in the area of legal requirements: Does this board (i.e., state board of education), which does not have complete administrative control over the entire vocational education system, meet the federal requirement for a sole state agency responsible for the administration or supervision of local educational agencies and postsecondary institutions?

Another question that must be asked is: Can these state agencies adapt themselves to meet the needs of an expanding program with increasing responsibilities? The traditional governance context for vocational education has been the public school. Yet the federal initiatives are increasingly targeted to special groups needing unique educational programs. There is some doubt that the present governance structure can accomodate these needs.

These questions are not new to vocational education. Several studies and reports issued during the early 1970's called for an examination of the governance of vocational education. The General Accounting Office Report (1974), Senator Pell's proposed federal legislation calling for the creation of a separate state board for vocational education, and the reports and testimony of the American Association of Community and Junior Colleges all questioned both the coordination among levels of vocational education and the equitable distribution of available resources among the various levels. Although the Education Amendments of 1976 call for a considerable increase in the level of planning and interagency cooperation, the fundamental issues raised by GAO, AACJC, and others probably have not been resolved. A state can comply with the rules and regulations pertaining to select target populations (e.g., persons of postsecondary-level vocational education) without major alteration in the state governance structure. The extent, however, to which equitable treatment of all educational levels can be provided by a staff with major responsibility for a specific portion of that system is in doubt.

The American Vocational Association's study, in conjunction with the National Association of State Directors of Vocational Education, called for the continuation of the sole state agency for the administration of vocational education at the state level. The issue is not whether a sole state agency is needed but rather how to optimize such a governance structure to assure compliance with federal initiatives and provide for state and local interests and preferences.

Functions and service areas. The functions to be served by the state agency appear to be a basis from which to examine the problem of governance. These functions have been subject to a number of studies. A review of the literature on both the historical development and delineation of functions suggests that states ought to assume as their primary missions the following: (1) to conduct long-range planning, goal setting, research and development, and evaluation; (2) to identify educational needs; (3) to provide leadership in communicating educational problems and recommended solutions to the legislative and executive branches of state government and to the public; (4) to assure statewide communicative and coordinative networks; (5) to equitably finance education programs; (6) to develop standards and regulations for the optimal operation of educational delivery systems; and (7) to provide leadership for statewide planning and development (Bailey, 1962; Dochterman and Beshoar, 1970; Pierce, 1973; Campbell and Mazzoni, 1974; and GAO Report, 1974).

More specifically to vocational education, the synthesis report of the 1975 National Leadership Development Seminar for State Directors of Vocational Education suggests that the sole state agency responsible for the administration of vocational education should perform the following: (1) conduct annual and long-range planning; (2) determine state policy, including rules, regulations, and guidelines; (3) approve and disapprove programs for federal and state funds; (4) receive and distribute federal funds available for vocational education; (5) distribute state funds available for vocational education; (6) review state fund budget requests made to state legislatures and make recommendations on state funding levels to state legislatures; (7) evaluate programs and activities; (8) certify personnel; (9) administer services to LEA's and institutions; and (10) provide technical assistance or program services to LEA's and institutions.

Another basis from which to examine governance is the service areas of vocational education, i.e., the levels of instruction or distinct activity areas in the field of vocational education. From the perspective of the state agencies concerned with education, service areas encompass those broad programmatic thrusts (both content area and target groups) to which the SEA and LEA have a distinct relationship. When considering federal service area initiatives, the Educational Amendments of 1976 are specific: (1) secondary vocational programs, (2) postsecondary vocational programs, (3) adult vocational programs, (4) special needs or other special target group programs and activities, (5) consumer and homemaking programs and activities, (7) guidance and counseling activities, (8) personnel training activities, and (9) sex bias and sex-stereotyping elimination.

Most research studies on the governance of vocational education examine it from the perspective of the administrative system and do not document what administrative functions are performed or what the service area priorities are. This failure is a critical deficiency, because the extent of compliance may well be related to the degree of correspondence between the states' delineation and prioritization of functions and services and the federally mandated efforts.

Several issues are important in this regard. First, a governance structure may not have the capacity to carry out all the mandated functions and services. Second, given the capacity to carry out these functions and services, the priority given to each of them will probably vary greatly, resulting in much attention directed toward some activities and very limited attention toward others.

Conclusion

This brief analysis of the state governance structures used to administer vocational education programs has been intended to highlight the wide range of variation. Clearly, within the sole state agency concept there are marked differences in governance structures from state to state. Additionally, several factors relating to governance that have major implications for compliance with federal regulations have been discussed. The analysis of these factors leads to several broad conclusions:

1. The governance of vocational education has historically been vested within the educational system, and variations in approach largely reflect the states' efforts to accommodate the changing federal initiatives within these separate systems.

2. Strict compliance with the letter of federal mandates specified in the rules and regulations probably exists at a very high level. The essential concern, however, should be with the state's commitment to the spirit of these initiatives.

3. A common problem associated with all aspects of compliance is the states' need for time to accomodate their structures and practices to the federal initiatives.

4. There is some doubt that present governance structures can accommodate the expanded array of functions and services called for in the Education Amendments of 1976.

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RESEARCH ISSUES FOR VOCATIONAL EDUCATION:

COMPLIANCE AND ENFORCEMENT OF FEDERAL LAWS

Michael W. Kirst

This paper will analyze the potential effectiveness of several compliance strategies as background for suggesting research directions. Suggestions for a more theoretical approach are in the conclusion. The three compliance approaches are bottom-up, top-down, and public/private competition. Given the rigidities and loose coupling in the existing intergovernmental vocational education delivery system, a combination of all three strategies is desirable.

The Vocational Education Amendments of 1976 seek to change existing vocational education programs, beneficiaries, and procedures. Moreover, the 1976 statute is much more precise in specifying federal purposes than are earlier omnibus acts. But it will undoubtedly be integrated with the existing vocational education political and administrative system.[1] It is my thesis that the 1976 federal act lacks the incentives and sanctions to bring about compliance with federal intent within the next few years. There is some hope for a long-run (10-year) compliance. I would contend further that it is unlikely that federal influence will ever be sufficient to reorient vocational education substantially without drastic changes in the existing federal-state-local delivery network.

The situation is not hopeless. Several options suggest themselves. States could lead in the reorientation, without federal stimulus other than traditional USOE enforcement. This is now probable in a few states. Another option is that vocational education could be mounted through federal-local contracts with organizations that include but mostly transcend the public schools (e.g., MDTA skills centers). This is politically unlikely, as is a third possibility: vendor payment arrangement to students for Grades 10-12, under which students could use the payments at either private or public vocational education schools. Most likely is an incremental strengthening in the patchwork of federal sanctions and incentives, using both top-down and bottom-up compliance strategies. Such an incremental strategy has worked with ESEA Title I by gradually increasing compliance with the key provisions.[2] Vocational education has a lot to learn from the strategies used to bring LEAs into substantial compliance with Title I of ESEA. In order to assess the likelihood of these options, the paper begins with an analysis of past compliance strategies.

Federal Influence in the Current Vocational Education System

Some quotations from our state study (Berke and Kirst, 1972) can help convey the flavor of the existing influence network. From the New York case by Professor Frederick Wirt:

> Of all the federal school programs in New York, vocational

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> education has been the most free from federal control, the most resistant to urban claims, and the most protective of its long established autonomy within the N.Y. State Department. (p. 359)
>
> One official, asked about the (New York) State Office of Occupational Education's main constituency, did not say "students," but "regional superintendents" who are the directors of BOCES, none of which is urban centered. The State Office of Occupational Education's (OOE) position was that it was free to use funds according to its own priorities, developed in turn by vocational education regional planning agencies. (p. 359)
>
> This sense of vested interest is reflected in OOE attitudes toward federal pressure. Because Washington provides only about 10 percent of New York's OE funds, an OOE official concluded, "This is administered as a state program without federal influence." (p. 362)

Wirt concludes that New York's occupational education administration is a "closed policy-making system"--insulated from significant influence by parents, students, state legislators, the hierarchy of the State Department of Education, and the U.S. Office of Education. It is also largely insulated from oversight by local school superintendents, who leave local policy to their own vocational education specialist.

Professor Iannaccone's Massachusetts case expressed the same viewpoint in different terms:

> Unlike other federal programs in our study, vocational education has a very long history and tradition of operations which provide the critical framework for recent developments. The existence of federal support from World War I on has produced in Massachusetts and elsewhere, a well established politically active constituency, and a close informal relationship between local vocational education directors and state officials....
>
> The 1963 federal vocational education act produced a statewide constituency...with regional high schools as the key structural units. (p. 216)

Massachusetts used an intricate project system to award vocational education projects, with nonpaid outside reviewers. Twelve supervisors reviewed the expenditure of $8 million in federal aid.

Vocational education not only has a close informal interest structure among federal-state-local professionals, but it is also the most isolated component of the State Department of Education. My study of Texas concluded:

> Vocational education is by far the most complex federal aid program in Texas. This complexity has discouraged attempts

> to evaluate administrative performance or reduce the discretion of the vocational staff in TEA who resisted comprehensive planning and continues to go its separate way. Warren Hitt, the major TEA figure in federal aid, was reported to have remarked shortly before his death that "someday I would like to find out what is going on in the fourth floor vocational division." Other TEA staff refer to vocational education as a "separate barony." Indeed, a separate vocational division has existed in TEA ever since the 1917 Smith-Hughes Act....
>
> Vocational education support from the federal government is indistinguishable in program concept from state aid. (p. 259)

Anthony Cresswell's paper drawn from our book puts it this way:

> From the way they described their activities, it was evident that (State Agency) vocational educators had developed sets of norms and behavioral patterns which established them as separate from the local administrators, a functional group in their own right. (State vocational education administrators) are not simply transplanted local administrators. This suggests significantly less professional set congruence for the SEA and local administrators.[3]

In sum, vocational education is a state program which receives federal assistance. Vocational educators at all levels operate with a high degree of autonomy from the rest of their respective education agencies. They are frequently not just organizationally, but also physically, separated from the rest of the SEA by location in a separate building. Strong professional norms of vocational educators dictate that external (federal or state) regulation should not supersede peer regulation or personal autonomy in the function of the professional. Evaluations of the lack of impact of the 1963 and 1968 federal vocational acts demonstrate that members of the same vocational professional group and "function set" should not be expected to police or reorient each other. Vocational educators at all levels display remarkably similar educational background, work experience, and patterns of socialization, i.e., a high professional-function set congruence in Cresswell's terms. Like-minded administrators at the federal and state levels are responsible for establishing program guidelines, checking to see that proposals meet those guidelines, monitoring programs, and evaluating their effectiveness. There has been minimal independent auditing activity for example by HEW or GAO, compared to ESEA Title I. Management and performance information is so limited that administrative oversight and policy planning are severely curtailed.

A Review of Compliance with Federal Intent: 1963-1976

Experience with the Vocational Education Acts of 1963 and 1968 indicates that compliance with federal objectives has been limited because of the structural and procedural factors described above. An evaluation by Magnum of the 1963 Act stressed how little management control data was available:

> Numerous examples of the reporting system's limitations can be cited, but a few will suffice. Though the Act's philosophy was to refocus efforts on people rather than occupational groups, there are no demographic characteristics beyond the sex of the students. In a day of concern with racial discrimination and poverty, data on age, race, education, and family income are not collected. Though groups with special needs were to receive special treatment, there are no data to identify them nor describe the content of courses allegedly designed for them. If the Act was successful in its intent to encourage training for new occupations, there is no way to isolate them.[4]

Magnum concluded that the 1963 Act had failed in galvanizing change toward new federal purposes:

> Expenditures have increased, but the expansion has been largely in old occupational categories....Vocational education is not yet adequately responsive to the needs of the labor market.... There is little coordination between vocational and general education.[5]

In 1974, the General Accounting Office analyzed progress in meeting federal intent through the 1968 Act designed to overcome the deficiencies in the 1963 Act. Despite the expenditure of $3 billion between 1963 and 1974, the GAO review of seven states emphasized the same problems. The lack of longitudinal incremental compliance progress is noteworthy and the contrast with ESEA Title I is striking. The reasons for this fact will be examined in a subsequent section. GAO stressed that:

1. Persons with special needs (e.g., handicapped, disadvantaged) have not been given a high priority.

2. The multiple administrative levels--national, state, local--operate in virtual isolation.

3. Data for evaluation and manpower needs planning is inadequate or unused.

4. Funds are distributed to LEAs without identifying relative needs.

5. Student enrollments have not been aligned with employment opportunities.

6. Job placement and guidance were inadequate.[6]

In 1976, the National Center for Education Statistics reported that "traditional courses still dominate vocational education."[7] A 1977 review of vocational education data emphasized that we have made little progress since Magnum reported a decade ago.[8] As GAO noted, "data that would be helpful in planning is unavailable, inadequate, or unutilized" (p. 111). As a participant in California's 1977 state plan, I lacked basic data on:

- services for the disadvantaged
- quality of teachers
- occupational needs
- comparisons of programs among cities, rural, and suburban areas
- longitudinal studies of job placement and career impact.

Part of the compliance problem in 1963 and 1968 was the lack of connection between added resources and new federal objectives. The new federal funds could be used to pursue old objectives as well as new ones. USOE never agreed with GAO's comment that the 1968 Vocational Education Act envisioned a federal "catalytic role." Congress never repealed the purposes of the existing acts but merely added more (and somewhat inconsistent) objectives. Consequently, 1976 state allocations under Part B (now Subpart II) could be used for old-line as well as new programs to serve the disadvantaged. A crucial question is whether the 1976 Act is designed in such a way as to move LEAs toward the more recent federal objectives. One unobtrusive measure would be whether state offices continue to be organized around the traditional vocational education categories since the 1963, 1968, and 1976 Acts. Magnum's study found that SEA organization still featured the subject matter specialties (agriculture, home economics, etc.) as of 1963. GAO found the same thing in 1974.

Another possible measure of compliance activity would be the nature and amount of USOE rejection of state vocational education plans. Traditionally, "state plan" has been a misnomer. The plan is merely a legal agreement by the states to comply with federal laws in the use of federal funds. Increased USOE denial of proposed state plans (or specific provisions) would indicate a change in the professional congruence between federal, state, and local vocational educators. GAO observed that part of the professional norms between USOE and the states is "to hear no evil, see no evil."

> OE officials told us there is little analysis of the way states spend federal funds, and that OE does not know what the impact of federal vocational funding actually has been. They (OE) said that states have treated federal funds as another source of general revenue, and have used these funds primarily to maintain existing programs.[9]

It is hardly surprising that recent attempts to assess major overall federal vocational objectives, such as reduction of dropouts and higher earnings, are critically undermined by data gaps.[10]

While much is written about state governance patterns for vocational education, very little of this debate over separate state vocational education boards and advisory councils is informed by data on whether governance structures make a difference in meeting federal objectives.[11] Given the overall lack of compliance discussed above, a reasonable hypothesis is that state governance structure does not make a difference. The Berke/Kirst study revealed that vocational education divisions within SEAs had as much autonomy as separate state vocational education boards. Indeed, a search of the literature reveals scant attention by federal authorities to a basic implementation strategy. It is not clear what governance or delivery mechanisms federal planners expected would bring about compliance. Federal authorities assumed the state advisory councils would be countervailing review groups, but these councils may be uninterested in federal compliance. There is no evidence that the advisory councils have shaken state vocational education policy out of its traditional grooves. My experience in California indicates that the new Planning Councils mandated by the 1976 Act will be merely another layer of bureaucracy. The federal theory that a broad-based Planning Council membership will move vocational education toward federal objectives seems naive. While federal direct grants to LEAs have not been tried extensively, OE's performance with vocational education research and the prevailing OE deference to local control does not give one much hope for this strategy.[12]

Implications for the Vocational Education Act of 1976

The analysis above suggests that the Vocational Education Act of 1976 will be absorbed (in large part) into standard procedures for operating and funding.[13] The Act is swimming upstream against an extremely powerful current of vocational professionalism and norms. Even the vocational education division at the university level reflects the same autonomy and separatism found at the federal-state-local administrative levels. Most deans of university education schools know little about occupational preparation and are content to let the vocational education "experts" operate with minimal oversight. For example, the University of Illinois offers 54 courses in its Department of Vocational and Technical Education. Continuing education and adult education are subsumed under this department. The department offers the whole range of components in the usual education school course requirements--it is a mini-school of education, including courses on history, philosophy, curriculum, administration, separate subject matter specialties, evaluation, guidance, federal/state policy, and research. It contains separate courses on junior college and continuing education but is dominated by the elementary/secondary courses.

In short, the closed and isolated system of vocational education starts from the university level and ends up in OE. Even the youth organizations like the Future Farmers of America are organized around traditional approaches. OE has few instruments or motivation to exercise much leverage on this massive structure. The ephemeral federal demonstration project is viewed by the seasoned veterans in the field with a "this too shall pass" attitude. For example, career education was, in their minds, tied to the limited tenure of Assistant Secretary Marland.

There is not a state/local professional or political coalition (governors, legislators, interest groups) strong enough or interested enough to open up the closed system. There is no assurance that opening up the system to general state government officials, business, or labor through advisory or planning councils will change much. In the existing system, bargaining and interest-group activity is largely confined to the competing claims of the subspecialties. such as vocational agriculture vs. office skills vs. retailing. OE's norm for administration is deference to state and local autonomy. If policies do not change, Subpart 3 funds will primarily support traditional activities with new labels. Subpart 2 funds may flow in increased quantity to city schools, but no one will know what happens with intra-district allocations.

Some Strategies for Bottom-Up Compliance

In the mid-sixties, federal attempts to insure compliance with new complex federal laws focused on top-down strategies--detailed federal guidelines, auditors, field reviews, etc. Before turning to these it is useful to discuss some "bottom-up" compliance strategies that are necessary supplements to top-down strategies. Vocational education desperately needs new and different full-time people who can bore from within the professional establishment over time. This suggests starting at the preprofessional level by supporting training in administration and policy analysis within or outside of schools of education.

Many of the better university schools of education do not have occupational departments. In part, vocational training is viewed as a low-status endeavor for prestige schools. Some state universities might welcome the chance to set up a vocational education training program oriented to the cities and disadvantaged. Many universities recognize the connection between schools and work as a growing area but are undecided on where to locate it. Establishing a solid vocational education department would require a committed dean, but even 150 new graduates a year could provide alternatives to the existing closed-system professional mentality. The Great Society plan should teach us that compliance with federal objectives needs to be sustained by a grass-roots interest group structure. Otherwise, the Vocational Education Act of 1976 is diluted at each successive administrative layer in the federal process. The top-down process alone is insufficient. Some committed professionals might provide more long-run pressure than people who move in and out of the field, such as NIE research officers. In the past, intervention of non-vocational education reformers has been sporadic and the old-liners have learned to "wait them out."

A professional training strategy could be supplemented by some sophisticated buttressing of the existing conflict in the system--e.g., in the competition among levels of education for the occupational training dollar. In many states the junior colleges and postsecondary technical institutes are dissatisfied with the share of the dollar they have been getting. Intense bargaining has taken place over the distribution between the elementary and secondary schools and the junior colleges. Now various federal acts encourage the private proprietary schools to join the battle. These competitors for funds might open up the vocational education administrative process to more public debate. As a consequence, it would be easier for top-down oversight to gauge compliance than is possible in the current closed system. The more watchdogs there are over compliance with the federal act (for whatever motive) the more likely the intended federal objective will be realized.

The Berke/Kirst and more recent studies demonstrate that general government officials at the state and local levels lack staff for analyzing how to allocate funds among vocational education's competing levels and programs. In some states like Texas it is assumed that the vocational education group in the SEA (now called Occupational and Technical Education) is best equipped to make this decision. The legislature has almost no full-time staff, and the Governor's staff defers to the supposed expert judgement of the SEA staff. If part of the objectives of the 1976 Act is to enhance services for the disadvantaged/handicapped and to encourage new training approaches, then general government officials in some states could be allies.

The vocational education closed system has survived for so long in part because of the lack of analytical power and evaluative data on its effectiveness. While I was in Texas, I found it ironic that the Governor said he had vocational education as one of his top priorities for new money, yet he knew nothing about how ineffectively the existing delivery system functioned. Most professional educators who occasionally advise the Governor and legislature have little experience or formal training in vocational or career education. NIE research on compliance could explore the recent build-up in policy analysis by state government and what impact this staff has on compliance with federal objectives. In California, the legislative analyst's recent report has been highly critical of California's failure to implement federal intent.[14] There is no reason, however, to assume that state legislative objectives will be congruent with federal intent.

The Title I ESEA experience indicates that the most effective bottom-up compliance is through lawsuits and parent groups. The impact of public-interest law firms on key Title I provisions is very impressive.[15] A handbook for legal action has been prepared to guide a national network of lawyers who operate through federal legal aid organizations. Suits have been mounted on such diverse issues as targeting and concentration of funds, parent participation, and the use of Title I funds for clothing purchases.

Under ESEA, parent advisory councils must be set up at each school and help to insure that Title I is directed to their needs. These parent groups have created an alternative interest group to the professionals and have coalesced with lawyers. No such countervailing structure has been created around the vocational education acts. Legal groups have not been interested and parent groups are not organized. Indeed, the existing vocational education youth groups support the traditional subject matter specialties (Future Farmers, Trades and Industries, etc.) and in California lobby against change. The Title I experience suggests that federal vocational education administrators should create a legal intervention strategy. Reliance on elite advisory councils should be supplemented by drawing upon parents and students organized around the disadvantaged and the newer occupations.

Top-Down Compliance: Can We Learn from Title I ESEA?

A recent SRI report synthesizes and analyzes studies on trends in SEA management of ESEA Title I, 1965-1976.[16] They find dramatic improvement on an incremental basis. Some of their conclusions are:

1. Most states have developed adequate to good procedures for reviewing LEA applications for Title I funds.

2. At the LEA level, blatant misallocations of funds which clearly violated the intent of Title I have been substantially reduced.

3. As dollar exceptions have been reduced, increased attention has been devoted to process exceptions, i.e., violations of regulations which prescribe how programs are to be designed, students selected and retained, and parents involved.

4. The overall conclusion of this study is that there has generally been a quite positive trend in SEA Title I management.

If it can happen in Title I, why not vocational education? Which compliance strategies and tactics worked in Title I? Can they be transferred or adapted to vocational education? These are the essential questions in NIE's mandate to examine "how to achieve compliance with and enforcement" of Vocational Education 1976 provisions. Greater specificity in Title I legislation, detailed federal regulations and guidelines, and more aggressive program monitoring have produced a new pro-compliance climate.[17] This is a startling reversal from the conventional wisdom of the early 1970s, which held that a relatively low level of compliance with federal legislative expectations had been achieved. Goettel asserts that "outright malfeasance and non-compliance are rare. More important, there has been a general upgrading of the norms of administrative practice at each level."

Syracuse University Research Corporation has recently completed a massive field investigation of Title I compliance. The conclusions of their lead researcher merit quoting as a guide for an examination of how to achieve compliance with vocational education.

> Federal actions also may have an important role to play in improving state management practices. Despite the bad reputation associated with the federal government's audit procedures--only $750,000 of an estimated $266 million of potential violations has been returned to the federal government--many state officials apparently find it easier to enforce the regulations than to become involved in an audit exception.
>
> Similarly, the post-Watergate concern with trust in government apparently has also 'encouraged' state officials to enforce the regulations.

> In addition to these factors, however, the USOE Area Desk staff in the Office of Compensatory Education has played an important role in improving state management procedures. Each Area Desk has four professional staff who perform annual Management Team Reviews of the Title I operation in each state. Such reviews usually take about one week per state and involve site visits to four LEAs as well as interviews and examination of records and documents at the SEA. We have examined the composite results of these reviews for all fifty states and the separate review reports and state responses for more than a dozen. At the very least, the management team review process has produced incremental progress in state management procedures, even in those states considered to have outstanding programs.
>
> The USOE Management Team Reviews not only address compliance issues, but also concern the management capacity of the SEA to attain compliance and promote more effective programs. Each review report 'suggests' ways for the SEA to improve its operating procedures.[18]

While Goettel emphasizes the management process, he also mentions the fear of the audit. If there is a specific, immediate, and reasonable audit penalty that must be applied to LEAs found out of compliance, compliance is much more likely. The Title I comparability requirement is a good example. Too many of the vocational education requirements are too vague or lack performance data for monitoring. NIE could conduct a review of state/local vocational education audits to see what interpretation problems are crucial and where the process and/or federal regulations can be tightened. The 1963 and 1968 Vocational Education Acts were not even clear on whether federal funds should be used primarily for new or for old training activities.

USOE monitoring of SEA Title I administrative practices has focused on the state process to bring programs into compliance. SEAs are encouraged and assisted in monitoring LEAs in the same way that USOE monitors the SEAs. Goettel points out:

> Monitoring occurs through written reports submitted to the SEA, informal contact between local and state personnel, through formal on-site monitoring visits conducted by field consultants, and through on-site audits by state fiscal auditors who typically operate independently of the federal program staff. The USOE Management Review teams have emphasized the importance of frequent on-site reviews for each participating district; the informal standard seems to be to visit each district at least once every two years with annual visits to the large districts in each state. Particular stress is placed on instruments or checklists to be used by the SEA review team (just as the USOE teams employ checklists and set procedures for examining SEA records).[19]

In sum, the top-down compliance strategy can work. Title I ESEA is but one example. Other federal programs that have displayed compliance improvement from a low base could be analyzed for possible adaptations to vocational education.

The Title I experience suggests increases in OE and SEA staff time used for on-site monitoring and auditing. Vocational education regulations would have to be precise in stating the expected standards for state and local compliance. A possible method is to reduce other use of staff time (such as reviewing paper in Washington) and increase the SEA field review and audit staff. If LEAs know that it is unlikely that anyone is going to come out to the schools and look, they are less likely to comply. The impact of federal audits on SEA and LEA compliance should be studied. When federal Title I officials audited Mississippi and publicized the violations, this had an enormous effect on other Southern SEAs, who feared that they might be next. It is unlikely that OE or SEAs will ever be able to tell from an application form what or how well the LEA is doing.

More flexible enforcement tools than disapproval of applications or withholding funds are needed to deal with less-than-extreme noncompliance. Federal officials need to resolve lingering ambiguities and philosophical differences related to vocational education. For example, should vocational education money be used to support ongoing activities for many years?

Experimenting with Different Delivery Systems

A top-down strategy of regulation and auditing has its limits. Earlier we discussed bottom-up compliance approaches. In addition, research and demonstrations could focus on alternative delivery mechanisms other than the federal/state/local intergovernmental grant arrangement. Such alternatives might accomplish the purposes of the 1976 Act better and require a less elaborate and risky strategy of compliance. One such idea, for experimental R&D, is detailed below.

In his original statement on voucher plans, Friedman suggested that government provide loans to students for their specialized training, with repayment related to the estimated extra income they would earn for having received the instruction. Unfortunately, this laissez-faire approach to the institutional structure under which training is provided may fail to attack the problem of quality of training in sufficient measure. Let us consider the problem in more detail.

What are the difficulties in the present arrangements for supply of skill training in public, formal institutions?

1. Public institutions, especially those offering instruction above the secondary level, are subject to extreme political pressures. It is a popular thing for a local authority to establish, say, a new junior college with a vocational wing in a district that has none. Yet proliferation of institutions and of programs within institutions can quickly lead to a low rate of utilization of specific courses. The 1976 Act

relies on manpower needs projections to mitigate excess training capacity and course duplication. But the manpower planning approach is fraught with data gaps and lags.

2. Dropout rates in such public institutions are notoriously high. Are these high dropout rates related to the control, i.e., public-sector control, of training institutions? It is possible to think so:

a. Because there is no legal linkage between the training institutions and employers, the student cannot be assured of a job even if he completes the training program successfully; hence, when the student becomes temporarily frustrated in his academic program, he may view the cost to himself of dropping out as rather low.

b. Since employers, i.e., those persons who have the most intimate knowledge of what is required of new entrants to the work force, do not select students for admission to the training institutions or for assignment to specific programs within the institutions, and since the previous education of students, by which they establish their eligibility to enter the training institutions, has been general in nature, it seems rather a matter of chance whether a given student really has the motivation and aptitude to learn the trade he is studying; hence, an improper fit between the characteristics of a student and the learnings expected of him may force some students out. The 1976 Act specifies job placement efforts in local programs, but the issues raised above make compliance with the Act's intent difficult.

c. Students who find their work in training institutions administered by public authorities either too easy or too demanding cannot easily shift to another level of study; hence, certain of them would be likely to become bored and dropout-prone for lack of interest, while others would be forced out by academic failure. (The tendency of public institutions toward rigidity of program is not a necessary feature of their existence, but is possibly related to the fact that public institutions in the education and training fields are seldom scrutinized closely with respect to their own productivity and cost-effectiveness.)

d. The jobs for which the students are trained are sometimes monopolized by trade unions, membership in which may not be open *de facto* to new graduates.

3. Vocational education institutions are expensive to operate. As compared with general instruction, vocational education requires more capital facilities (e.g., laboratories and shops); they also require a greater quantity of consumable materials of instruction. Teachers in vocational education institutions, at least those who are competent, have good opportunities to work in production rather than in teaching, and they must be paid high salaries, as compared with arts teachers, to retain their services. Thus, it is possible, speaking realistically, to

run high-grade vocational education institutions only when those institutions can be made to operate efficiently. This means that courses must be filled with the maximum number of students who can be taught effectively in a given subject and that the dropout rate must be held to a low point. Yet, as we have indicated above, it is just these kinds of efficiencies that public institutions find difficult to provide.

The most common alternative to training conducted by public institutions is training provided by the employer in the work place. Now, a certain amount of on-the-job training is characteristic of every human economic activity. The question, however, is whether the employer should bear the major share of the responsibility for the development of work skills in the trades and in the technical fields. Apprenticeship is the form in which this employer responsibility has been most clearly delineated.

On the face of it, training by employers would seem to offer certain advantages. The training would almost certainly be relevant to the future work assignment of the trainee, because there would be no educational vested interests to dictate otherwise and because employers would have no incentive to provide irrelevant training. The courses would probably be flexible, in the sense that their length would be determined by the time needed for a given group of trainees to learn a particular set of skills. The program would be flexible, in the sense that courses would be started up or dropped in close relation to the current skill requirements of the employer. These kinds of flexibility are possible to attain because the employer can shift his senior staff from production work to part-time training of new workers and back to full-time production with great ease. Under a system of on-the-job training, the trainee should be less dropout-prone in three respects: first, he will feel a closer nexus between success in learning new skills and immediate advancement in the firm than he would feel if he were a full-time student in a public training institution, where desire for success in learning is clouded by uncertainty about how and where he can finally get a job; second, because training is more individualized (which is possible, in turn, because the trainee spends part of his time in production), the pace of learning can be accelerated or slowed down in terms of the trainee's own progress, so that he is unlikely ever to become too bored or too discouraged with his instruction; third, he is usually paid.

However, there would appear to be certain disadvantages in shifting the main burden of training onto the shoulders of employers:

1. If standards of labor productivity are low to begin with, bright, young, eager trainees may regress to those prevailing low standards because they do not have any proper models of performance, if not of skill standards, to look up to.

2. Only in the largest firms--and sometimes not even in them--can the exceptionally good craftsman or technician find more than a handful of trainees to work with at any given point of time. He may have, perhaps, three apprentices when he could easily be teaching the more bookish parts of the craft to a group of twenty. On-the-job training does not

commonly allow economies of scale in the use of the time of instructors. This is a critical shortcoming, given the scarcity of highly skilled persons in operational fields in this country.

So there are disadvantages in relying mainly on publicly-administered training institutions and in relying mainly on on-the-job training. Some countries have tried to solve this problem by combining the two systems: to have, for example, apprentices receiving instruction in the practical parts of their craft in the work place and simultaneously receiving instruction in the more analytical aspects of their trade in publicly-administered training institutions (on a part-time basis). Actually, this solution may preserve the worst features of both plans. The public institutions may still be staffed by not-so-good instructors, on account of the low pay and status that working in such institutions implies. The trainee may still tend to regress to the low standards of productivity he sees about him in the work place. The problem of attaining efficient utilization of training skills,the producers' goods of the human resource industry, would still remain.

Fortunately, there is a "third way" to skill and technical training, namely, to have most of the training performed in institutions which are separate from the work place but to place those institutions under the financial and administrative control of consortia of employers. This plan was adopted in France in 1930, has worked well in Latin America (e.g., the Servico Nacional de Aprendizaje - SENA - of Columbia), and was taken up in England in 1964. High school students could receive vouchers or vendor payments from the state to attend this institution made up of consortia of employers. They could also use the vendor payment for private proprietary schools that are licensed and inspected by the state. Such a vendor payment scheme would provide competition. It would prevent high school vocational education people from constraining the student's choice to leave the school and seek training under state-approved institutions outside of LEAs. What are some of the possible advantages of the "third way"?

1. The system would provide flexibility in the education and training system where it is more needed. Contrast, for example, the planning of programs for medical professionals with that of programs for skilled and technical workers (e.g., machinists, foundrymen, draftsmen, loom fixers, electricians, computer programmers). In the former case, decisions are essentially judgmental: How many doctors per 10,000 of population shall the country have at fixed dates in the future? Once this decision is made, planning of programs for the training of doctors is relatively straightforward. In the latter case, one is dealing with many different types of skills, many of which are substitutable one for the other or with respect to capital. Demand for specific skills is subject to short-term shifts in output markets. Plainly, one should seek a flexible system of training for craftsmen and technical workers. Employer-administered training institutions can provide such flexibility, because employers can move their own craftsmen and technicians into teaching service on short-term assignments, if need be on a part-time basis.

2. At the same time, the training institutions would allow economies

of scale to be achieved in the utilization of time of the trainers. The number of persons a given trainer was instructing could be determined more closely by considerations of pedagogical and less by accidental considerations of how many apprentices, say, a given plan in a given firm happened to have at the moment.

3. If the training institutions were financed by a payroll tax, then the institutions would have an elastic source of revenue and one under which the volume of funds flowing to training activities would be functionally related to the degree to which management was substituting labor for capital and higher grades of labor for lower. The stop-and-go characteristics of training when it is strictly a responsibility of individual employers would be ended (after all, private training programs are generally the first casualty of a downturn in profits in a firm).

4. The training institutions would have the financial resources and the access to data to deal with a number of important topics of applied research, such as the following: What are the strategic learnings from general education necessary to learn specific work skills? How quickly can operational skills be taught to workers of different backgrounds, and what are the cost-effectiveness relations involved in acceleration of training, selection of applicants for training, and the provision of remedial education? Is a quantitative or analytical set of mind important in developing a high-productivity employee and, if so, how is this way of thinking best developed?

5. Other, somewhat more specific, advantages are the following:

a. Insofar as the training institutions required a permanent faculty, they should find themselves blessed with the financial resources and the prestige to attract competent teachers.

b. Students would benefit from having the intellectual discipline of the classroom, but at the same time they would have been placed in a new, work-oriented setting, different from the public educational institutions in which many of them had previously suffered failure and lost commitment to learning.

c. The structure of the training system could easily recognize regional differences in skill requirements and in caliber of students.

d. Individual training institutions could incorporate different levels of instruction (remedial, standard, advanced) and different forms (full-time, sandwich, evening).

e. The program could accommodate high school students, high school leavers, and high school graduates, thus offering an incentive structure consonant with the formal education aspirations of different youth.

Summary of Research Issues

It is not clear what strategies and tactics Congress had in mind to insure compliance in the 1976 Act. How did they differ from the 1963 and 1968 approaches? Some interviewing of Congressmen and their staffs on this issue would be an appropriate starting point. A number of research issues are suggested by the preceding analysis:

1. Why has compliance been so inadequate in the past? Some overall causes advanced in this paper include:

   - The lack of an implementation or political strategy to overcome the "closed governance system."
   - Ambiguous guidelines and legislation, e.g., is the act designed to support "new" or "old" training programs?
   - The lack of an information system for oversight and evaluation.
   - The norms of professional vocational education favoring state/local autonomy.
   - Failure to create a bottom-up lobby for compliance, including legal intervention and parent/student groups in poverty areas and emerging occupations.
   - The failure of federal audits to galvanize substantial change.
   - The lack of aggressive enforcement by OE.

Researchers could probe which of these causes have been crucial in the past, the ways in which the 1976 Act dealt with them, and probable effects on compliance to be expected from alternative approaches. Probably problems in compliance with different provisions of the Acts of 1963 and 1968 were caused by different combinations of these major compliance problems listed above. These specifics need to be explored and linked.

2. Do governance changes or structures make a difference in compliance with federal objectives? Some subtopics:

   - What impact have advisory councils had?
   - Do separate state boards of vocational education help or hinder compliance?
   - Does oversight by governors and legislators help or hinder compliance?
   - Does increased competition for funds among interest groups such as community colleges versus elementary/secondary enhance compliance?
   - Do states who allocate most of their Subpart 2 money to area

vocational education schools display more or less compliance than the average?

3. Can compliance strategies that worked with Title I ESEA be transferred or adapted to vocational education? What is the compliance potential of more frequent audits, OE/SEA management reviews, clarification and consolidation of regulations/guidelines? Is there incremental movement toward compliance? (This suggests longitudinal compliance monitoring that does not anticipate sudden and dramatic improvement.)

4. Do radically different delivery systems such as employer consortiums have promise for compliance with such objectives as placement, cost/effectiveness, and training geared to labor market needs?

5. Previous studies (i.e., Berke/Kirst) have discovered wide variation among states in compliance with federal laws (although Berke/Kirst found a rather uniform low level of compliance with vocational education legislation). Assuming there are interstate differences, what caused these differences prior to the 1976 Act? Has the 1976 Act increased or decreased the interstate variation?

This analysis requires separating state compliance issues from compliance problems primarily oriented to the LEA level. Again, any compliance study must begin by asking what specific compliance issue or statutory provision we are concerned with and which level of government has primary enforcement responsibility.

6. Compliance will vary for different parts of the 1976 VEA. For example, sex equity will probably come slower than set-asides for the handicapped. Criteria should be established to select key provisions and follow them on an intensive basis. The differences in compliance among various provisions can provide some insight into general compliance causes.

7. Vocational education compliance research should be merged with the burgeoning literature and concept development in "implementation."[20] A separate paper could derive testable hypotheses from this literature. Among the concepts that show some promise are macro versus micro implementation, mutation, implementation passages, and mutual adaptation. Berman has concluded:

> We cannot expect the development of a simple or single theory of implementation that is "context free" and that eliminates uncertainty. A more modest, yet extraordinarily difficult goal, is to develop institutionally-grounded heuristics for policymakers based on their setting.[21]

Berman hypothesizes that implementation can follow one of four paths:

(1) nonimplementation, no adaptation in project plan or in deliverer behavior;

(2) cooptation, no adaptation in deliverer behavior, but adaptation in the project to accommodate existing routines;

> (3) technological learning, no adaptation of the project plan but adaptation of routinized behavior to accommodate plan;
>
> (4) mutual adaptation, adaptation of both the project and deliverer behavior.
>
> It would be remiss not to point out that the Rand study of educational projects found no implementation that could be described as technological learning; projects were either adapted to local conditions or not implemented at all. Moreover, the only projects that seemed to produce effective outcomes were those whose paths showed mutual adaptation.[22]

We do not have the information on vocational education to judge which of these outcomes is prevalent. The compliance studies we do have indicate that No. 1 is the most frequent. But a compliance study using the Berman-McLaughlin concept of "mutual adaptation" might be productive.

8. There have been some attempts to apply utility theory to the concept of compliance.[23] As in the case of implementation, the existing state of theory needs refinement before it can guide a study of VEA 1976. Briefly, Stover and Brown demonstrate that the seemingly disparate literature on compliance with law is consistent with the principle of psychological hedonism, which is the major premise underlying utility theory. They postulate that

> people will fail to comply with law when the utility (net gratification) of such action is greater than the utility of employing their time and resources in the most beneficial available compliant activity.[24]

The explanatory and predictive potential of utility theory for VEA 1976 can be fulfilled only by calculating values and expectations. If this information were complete and precise, one could determine Un-Uc. Un is the utility of engaging in the most "profitable" available illegal activity or activities and Uc is the utility of engaging in the most "profitable" available legal activity or activities. If we had such information for a representative sample of an SEA or LEA we could predict compliance (probably with regard to particular VEA provisions). Also, it would be desirable to predict the effect on Uc and Un of different enforcement techniques such as audits, OE monitoring, or pressure by disadvantaged groups. Stover and Brown illustrate this technique by altering the certainty of imprisonment for various crimes. An alternative approach would be a careful analysis of compliance rates for various population subgroups such as states, LEAs, sex, educational backgrounds, etc. Moreover, we could use survey research to measure the extent to which the groups mentioned above differ with regard to particular values and expectations related to compliance.[25] Obviously, theory development is only beginning in this area and is of limited use for design of empirical studies.

A Concluding Note

Vocational education is a major federal program with an established constituency. In recent years, however, the growth of the program has been restricted in part because of Congressional and Executive branch concern over noncompliance with federal intent. The Carter Administration has recommended no increase in vocational education support. Consequently, research on compliance is vital to the future direction of the vocational program at all government levels.

NOTES

[1] Joel S. Berke and Michael W. Kirst, Federal Aid to Education (D.C. Heath: Lexington, 1972).

[2] See Peter G. Briggs, "A Perspective on Change: The Administration of Title I of the Elementary and Secondary Education Act" (Washington: Planar Corporation, 1973). For the most recent data see Robert J. Goettel, "Federal Assistance to National Target Groups: The ESEA Title I Experience," to be published by Bollinger Press, 1978.

[3] Anthony Cresswell, "Professionalism and Education Policy," Carnegie Education Center, January 1973 (unpublished).

[4] Garth Magnum, Reorienting Vocational Education (Ann Arbor: University of Michigan, 1968).

[5] Ibid., p. 21.

[6] General Accounting Office, What Is the Role of Federal Assistance for Vocational Education (Washington: Comptroller General, MWO-75-31, 1974).

[7] Education Daily, March 18, 1976, p. 7.

[8] Arthur Lee,"Project Baseline: Historical Foundations for Vocational Education Statistics," Educational Researcher, July-August 1977, pp. 3-9.

[9] GAO, op. cit., p. 18.

[10] See Henry Levin, "A Decade of Policy Development in Improving Education and Training for Low Income Population," in A Decade of Federal Antipoverty Efforts (Madison: University of Wisconsin, 1977), pp. 172-179.

[11] See National Association of State Boards of Education, "A Report on the Planning, Improvement and Governance of Vocational Education" (Denver: NASBE, 1976).

[12] See David Rogers, "Vocational and Career Education: A Critique and Some New Directions," *Teachers College Record*, May 1973, Vol. 74, No. 4, pp. 504-511.

[13] The recent literature on implementation is very relevant to compliance research. For an overview of SEAs, see Michael Millstein, *Impact and Response* (New York: Teachers College Press, 1976).

[14] For an overview of the build-up of state analytical staffs see Robert D. Lee, Jr. and Raymond Stoffeldt, "Executive and Legislative Use of Policy Analysis in State Budgetary Process," in *Policy Analysis*, Vol. 3, No. 3, Summer 1977, pp. 395-406. For the report of the California Legislative Analyst, see *Vocational Education in California* (Sacramento, April 1977).

[15] See Frederick Wirt and Michael Kirst, *Political and Social Foundations of Education* (Berkeley: McCutchan, 1975), pp. 153-170.

[16] Thomas C. Thomas, *Trends in State Management of ESEA Title I* (Menlo Park: SRI, 1977).

[17] See Goettel, *op*. *cit*., p. 2.

[18] See Goettel, *op*. *cit*., pp. 19-20.

[19] See Goettel, *op*. *cit*., p. 21.

[20] For an overview see Carl E. Van Horn and Donald S. Van Meter, "The Implementation of Intergovernmental Policy," in Stuart Nagel (ed.), *Policy Studies Review Annual* (Beverly Hills: Sage, 1977), pp. 97-120.

[21] Paul Berman, "The Study of Macro and Micro Implementation," in *Public Policy* (Spring 1978).

[22] *Ibid*., p. 21.

[23] Robert Stover and Don Brown, "Understanding Compliance and Non Compliance With Law," in Nagel, *op*. *cit*., pp. 121-133.

[24] Stover and Brown, *op*. *cit*., p. 133.

[25] For an example, see Edward Banfield, *The Unheavenly City Revisited* (Boston: Little, Brown, 1974), Ch. 8.

II. QUANTITATIVE DATA SOURCES

One of the concerns of any policy inquiry is the extent to which reliable data are available for analyses. This is a particular problem with respect to vocational education. Once again the decentralized nature of the field emerges. Different states have different means of counting enrollments. Program requirements also vary. Aggregating data is, at best, a difficult task. Indeed, the lack of a reliable vocational education data base was of particular concern to the Congress when the 1976 Amendments were drafted. This concern is reflected not only in the GAO[1] and House Committee Reports,[2] but appears also in the legislation in the charge given jointly to the Commissioner of Education and the Administrator of the National Center for Educational Statistics to develop a new "national vocational reporting system" (Sec. 161.(a)(1)).

Elsewhere the importance Congress places on a reliable vocational education data base appears with the charge, again jointly given to the Commissioner of Education, the Administrator of the National Center for Educational Statistics, the Commissioner of Labor Statistics, and the Assistant Secretary of Employment and Training, for the establishment of a National Occupational Information Coordinating Committee to develop and implement

> an occupational information system to meet the common occupational information needs of vocational education programs and employment and training programs at the national, State, and local levels, which system shall include data on occupational demand and supply base on uniform definitions, standardized estimating procedures, and standardized occupational classification. (Sec. 161.(b)(1)(B)).

The task of establishing uniformity where diversity is the norm is beset with problems. In this section two papers discuss varying aspects of this issue.

In his paper, "The Vocational Education Data Base," Arthur M. Lee discusses the characteristics of data collection on the local, the state, and the federal levels. He states that because of a lack of coordination among these levels no complete knowledge of the vocational education data base exists. From 1972 to 1976 the author directed Project Baseline, a series of annual reports on vocational education mandated by Congress. Lee's insights into the problems of aggregating the data base are many, for he has had the experience of confronting the issues over the years.

In the next paper, "Effects of Vocational Education Programs: Research Findings and Issues," John T. Grasso and John R. Shea review in detail available data from several national surveys that bear upon the issues and resulting research findings related to the effects of vocational education on program participants.

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THE VOCATIONAL EDUCATION DATA BASE

Arthur M. Lee

General Characteristics

Skilled employment in the United States depends on a variety of educational and training programs, public and private, as unstructured as the economy itself. Included among them are both on-the-job and organized training by most employers, a large number of private training schools, the very substantial occupational training provided by the armed services, apprenticeship programs in the skilled trades, public manpower programs supported largely by the Department of Labor, and vocational education in the schools. Very little coordination exists either in the training provided or in knowing what is being done for whom and with what results.

Coordination of programs or information is virtually nonexistent at the national level. At the state level some states have interagency coordination among publicly supported programs, and licensure of private training schools has been given to a number of the state vocational education agencies. The most effective coordination that does take place is at the local community level, usually through vocational education advisory committees. Even these, however, rarely include private training schools or training in the armed services.

Within this confused and in some respects chaotic situation, vocational education has been functioning for more than fifty years. During the past decade and a half a substantial amount of growth has taken place, and the nature of vocational education has undergone considerable change. Many states during the same period have increased the amount and kinds of data that describe their programs through the development of automated information systems, and numerous local school districts are increasing the availability of detailed information through automated record keeping. At the national level, some of these additional data have been assembled and disseminated by Project Baseline. But lack of standardized definitions, the uneven quality of data reporting, fragmentation of sources, and the almost complete absence of some kinds of data make the entire data base far from adequate as well as difficult to use.

This paper will present a description of that data base in terms both of its current and foreseeable usefulness and of its shortcomings. Only that part of occupational training carried on in public secondary and postsecondary schools will be included. For the most part,

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that is what is currently known as vocational education, but it goes beyond what is usually reported to state and federal agencies as vocational education. Those reports, in turn, include many classes below high school level which, although recognized as vocational in federal legislation, are of a pretraining nature and not included in this assessment of the vocational education data base.

Most of the data at the secondary level are confined to grades eleven and twelve, although this is not readily apparent in most reporting systems. In states where secondary schools may offer three- and four-year sequential programs, and in those where freshmen and sophomores may enroll in one- or two-year programs, it is rarely possible to know the grade level (and thus the comparative maturity and approximate time for entering the employment market) of high school vocational education students.

One of the most confusing aspects of both secondary and postsecondary data is a total lack of agreement about where to include adults. In some states they are all reported as postsecondary students, while in others adults who attend evening classes in high school facilities are reported as secondary students. The problem stems from the federal government's insistence on considering adult vocational education as a separate level rather than a particular classification of students.

Most of the postsecondary institutions are of two kinds, community colleges and technical institutes. There are a number of four-year colleges and universities offering limited vocational education, and there are also high schools where graduates can enroll in postsecondary programs, but these are relatively few. Kinds of institutional arrangements at both the secondary and postsecondary levels vary from comprehensive academic and vocational combinations on single campuses to a variety of separate skill centers organized within single or multiple schools and school districts.

No complete knowledge of the vocational education data base exists. Its characteristics vary widely between schools with automated record systems and those with only paper files, between large institutions and smaller ones, between urban and rural locations, and between school districts as well as state governments having different official policies and practices regarding school record maintenance. The responsibility for whatever is known and also what can be made available to the public rests with local school boards, school administrators, and state legislatures.

Some efforts to standardize local school record keeping nationally have been made by the National Center for Educational Statistics in its educational handbook series. The U.S. Office of Education (USOE) and the National Association of Chief State School Officers have been working together for more than a decade trying to obtain a degree of uniformity, first in the Bellmont Project, then in the Common Core of Data, and currently through a subcommittee of the National Association of Chief State School Officers known as CEIS--Committee on Education and Information Systems.

Very likely, the underlying cause of a lack of uniformity, and this includes the vocational education data base, is the division of responsibility noted above among school boards, school administrators, and state legislatures. Local boards have a tradition of autonomy, whether real or imagined--and this varies, too, among the different states.[1] The exercise of that autonomy in adopting record-keeping and record-handling policy (including definitions of data in the records) leads naturally to a nonuniform data base within each state. School administrators may compound the problem through their own differences in exercising their responsibilities. State legislatures make their own contributions to national confusion by establishing additional mandatory requirements of their own.

The result is that, while certain kinds of data such as total numbers of students by grade level and sex, and clock hours of courses, may be uniform, other kinds are not. These include instructional costs, course titles and content, numbers of handicapped and disadvantaged students, and many others. A very serious element of nonuniformity is added when local school administrators are asked to report data from files that were not designed for that purpose. Even if sufficient staff are available to do this with a high degree of accuracy, which is often not the case, it is probably true that such data are supplied by most schools on the basis of guesswork and estimates rather than actual records. And when there is any question as to precisely what data are requested, which happens in the use of printed forms and questionnaires distributed by mail rather than through personal interviews by trained researchers, this approach can contribute to uneven data and to some extent unreliable data.

At the state level there are literally over fifty different kinds of vocational education data bases. The only common core of data is the set of gross statistics reported by each state to the federal government, and this is laced with definition and procedural inconsistencies. Information about the state data bases comes from several sources. One is the set of federal reporting forms used to compile and transmit student, followup, financial, and instructional personnel totals to the U.S. Office of Education. Another, which is a multiple source, consists of the state vocational education directors and information specialists in each of the 52 states (50 states, Washington, D.C., and Puerto Rico) with whom the Project Baseline staff have worked during the past six years. Several research projects in recent years have also developed data-base information, notably the EDNEED study by North Carolina State University at Raleigh and the Ohio State University Center study of state management information systems.

Responsibility for each state's vocational education data base rests primarily with the state board for vocational education, an agency required under federal legislation. State board policy is administered by a state director and his or her staff, who often exercise considerable responsibility of their own. Within the past decade, some of the responsibility has also been assumed by the state superintendent of education under whose authority state directors function in all but a few states.[2]

The most powerful element in the direction of national uniformity, and to some extent an encroachment upon the responsibility of state boards and state directors, has been federal reporting. Not only are the data required for this purpose the only common core of data that exists at the state level, but in a majority of states that data is virtually the only vocational education data base. These data, of course, are characterized by nonuniformity of definitions and questionable reliability, but they are much better than no data base at all.

A second major element that may lead to greater uniformity of data at the state level is the development of automated information systems. These too are directly and indirectly produced by federal initiative and support. Many states developed their systems with federal vocational research funds within their federally created and supported research-coordination units (RCU's). More recently the Research and Demonstration Division of the Bureau of Occupational and Adult Education (BOAE) has encouraged their further development with grants from the Commissioner's discretionary vocational research funds.

Most states, however, even with automated information systems, have not gone very far beyond collecting the data required in the federal reports. It should have been necessary to have more complete data bases at the state level in order to carry out the planning and reporting functions under federal legislation since 1963, but the states were not required to do so. In 1976 Congress laid down some new requirements. A national vocational education data system (VEDS) is to be established by the National Center for Educational Statistics (NCES), using standardized definitions. Even VEDS will not be adequate at the state level, because Congress also added stringent new requirements for data in each state's five-year and annual plans and in annual accountability reports.

Whether the intent of Congress is realized or not waits to be seen. There are at least three obstacles: (1) an unwillingness by many states to let the federal government tell them what data they must provide and in what form; (2) the difficulty that any federal agency has in designing and putting into operation a complex activity involving all kinds of political ramifications as well as more advanced technology than most federal agency personnel are familiar with; and, most importantly, (3) inadequate funds and staff to get the job done. Very serious and commendable efforts are underway to accomplish what Congress has called for, but a completely realistic assessment of the vocational education data base at the state level for at least the next several years would suggest that no great changes are going to take place.

Information about data available at the federal level comes directly from the agencies involved, BOAE, NCES, the Bureau of Labor Statistics (BLS), the National Occupational Information Committee (NOIC), and others in the Department of Labor and Commerce. Individuals within those agencies who are working with the data on a regular and usually full-time basis are particularly knowledgeable. Additional information is available in the Project Baseline files, six years accumulation of many kinds of data too fragmented to have been published but nevertheless valuable in assessing data availability.

The data base itself at the national level does serve the purpose of providing a little more information about vocational education than is known of any other segment of education in the schools. Its inadequacies and flaws have been repeatedly pointed out by the National Advisory Council on Vocational Education, by Congressional committees, and particularly by the authors of Project Baseline reports over a period of many years. Some improvement has been shown in recent years as far as reliability of the data is concerned but none whatever in the adequacy and utility of the data being collected. In some respects utility has been impaired through almost annual changes in reporting requirements. This has been particularly true of financial data and student characteristics.

Responsibility for the vocational education data base at the federal level has been for many years a function of the vocational division of the U.S. Office of Education, currently the Bureau of Occupational and Adult Education. This will change in FY 1979 when NCES takes over, regardless of the extent to which NCES will have succeeded in its development of VEDS.

It is not, however, an undivided responsibility. Congress also created in the 1976 legislation a National Occupational Information Committee, made up of members from the Bureau of Occupational and Adult Education, the Bureau of Labor Statistics, the National Center for Educational Statistics, and the Department of Labor Office of Employment and Training. While the legislation is not clear as to the relationship between NOIC and the NCES's national Vocational Education Data System, in practice NOIC exercises a limiting function. The most important division of responsibility, however, is with the Office of Management and Budget (OMB), which by law must approve all data-collection forms. In recent years OMB has pursued this responsibility with increasing vigor, subjecting any new collection of data to additional judgment and often to inordinate delay.

From these observations it is evident that responsibility is not adequately centralized at any level to hold much hope for a completely satisfactory vocational education data base as long as that situation prevails. At the local level responsibility is divided among school boards, administrators, and state legislatures. At the state level it is divided among state boards of vocational education with their state directors and staff, state superintendents of education and their staff, and the requirements of federal reporting. At the federal level it is divided between the U.S. Office of Education with its Bureau of Occupational and Adult Education, the National Center for Educational Statistics, the National Occupational Information Committee, and the Office of Management and Budget. Improvement over the situation as it exists now is certainly possible and can be expected. How long it takes and how far the improvement will go without more prodding by Congress waits to be seen.

Data at the Local Level

Vocational education course and program data are largely limited at the school district level to descriptive titles and brief descriptions of their content. Clock hours of instruction can be computed, and this adds a quantitative measure of possible student knowledge and skills attainment. The grade level at which a course is taught is an indication of expected student maturity, and when prerequisites are listed a degree of advancement is also added. In employment training programs encompassing groups of courses, usually requiring two, three, or even fours years to complete, it is possible to put together composite descriptions from what is known of the courses. But these are the only data that are ordinarily available.

Actually, detailed course content is known by teachers and administrators at each school, but it is seldom a matter of record. The knowledge and skills acquired by students who successfully complete a course or program are equally undocumented. Moreover, research on commonalities in similar courses and programs in different institutions, and especially in different states, has shown extreme variations as often as evidence of a common core of knowledge and skills. This point needs to be made in assessing the vocational education data base, because it rules out the possibility of obtaining more than skeleton data on the scope of what is taught or what students who complete vocational education programs may be expected to know.

Not even these program data are included on federal report forms, which contain nothing but federal course numbers and titles. These correspond to most, but not all, of the courses offered by local secondary and postsecondary institutions. Some new and innovative courses have no federal equivalents. Not infrequently employment preparation programs of one, two, three, and four years are identified locally as industrial arts, general business, or by some other designation rather than as vocational education. In other cases, vocational education courses and programs are not included because they are not receiving federal support and there are no compelling reasons to submit federal reports.

Student-enrollment data at the local level, on the other hand, are much more adequate than course and program data. School records invariably contain, in addition to names and addresses, each individual's age, grade level, sex, courses in which enrolled, grades, and often achievement-test scores. Names and addresses are used by many states for mailing out followup questionnaires, but in others they are protected against invasion of privacy.

One element in the address does constitute a valuable addition to the enrollment data base without invading privacy, and that is the postal zip code. The Bureau of the Census has developed zip code socioeconomic profiles, which provide additional data about students enrolled in different kinds of vocational education programs in different kinds of neighborhoods.

Because of a variety of federal and state programs for students with special needs, additional student characteristics are being identified in an increasing number of schools. These include low family income, presence of a handicapping condition, minority status, and classification as gifted or talented. Most schools, however, still have only part or none of these data in their records, and their responses to requests on federal forms and in research instruments vary from fairly good estimates to pure guesswork.

One of the most difficult problems with vocational education enrollment data at the local level, as well as at every level above, is in knowing whether the compilers of the data mean course enrollment or program enrollment. Some states attempt to restrict enrollments to programs requiring two or more years of courses, but there is nothing to prevent students from leaving programs with fewer than the required courses, and many of them do. Some states make no distinction. Students taking single courses as electives are often included equally in the data base with those enrolled in two-, three-, and four-year programs. When these data are mixed together the difference in total enrollment is substantial, and the extent of preparation for employment by the average enrollee loses much of its meaning.

Another problem is in knowing the occupational objectives of students enrolled in vocational education. In the case of students enrolled in programs requiring a sequence of courses, their occupational objectives should correspond to the employment objectives of those programs. In most cases they do, but a fairly substantial number of students take courses in more than one program. For example, an agricultural student may take auto mechanics, and a distributive education student may take a course in typing. This is perfectly all right for the students and probably gives them better all-round preparation for the job market, but how are their occupational objectives identified in the data base? In some cases their career goals are part of the record, but usually programs and occupational objectives are assumed to be the same, and no other data are available. In states where students taking single vocational courses are included in the data base as enrollments, it may be only coincidental if their occupational objectives can be identified by the courses they are taking at any given time.

The occupational objectives of vocational students become important in relating enrollments as well as in relating completions to employment market demand. Students, for example, may be enrolled in secretarial courses in numbers great enough to overbalance the need for secretaries, while in fact many of them have no intention of going into that field but are merely picking up skills to be used in quite unrelated careers. Occupational objectives are also used as part of the major criterion in judging the success of vocational programs. If, after completing their programs, students are employed in the fields for which they were trained, those programs are judged to have served their purpose well. But this assumes that the occupational objective of each student is a matter of record, and since that is not true the current basis for evaluating vocational education is not as valid as it should be.

One unfortunate characteristic of local school enrollment data bases is their lack of continuity. Some records are kept in permanent files, but even where automatic data processing is used record storage becomes a problem. Consequently, each year's data are for the most part available only during the year when they are current. If data are needed for prior years, quite often they are simply no longer in existence. If data collection encounters any kind of delay and requests reach local schools more than a month or two after the school year has ended, more than likely the requests cannot be met. Such data can only be estimated, and even estimates are possible only for gross data, not for detail.

One remaining problem with the data base at the local level should also be recognized. School administrators are usually reluctant to provide data about their students and programs, for a variety of reasons. The extra time and effort required of themselves and staff personnel is hardly a welcome addition to their responsibilities. In many cases, there are problems of kinds of data available having to be related to kinds of data wanted. If enrollment files are not automated, they also be fragmented in more than one office. If they are automated, existing programming may not be capable of obtaining the particular data elements and compilations wanted.

More importantly, school administrators are not ordinarily very comfortable in releasing data about their operations. This is particularly true of data required by the federal government beyond what is absolutely necessary. They have been plagued by so many federal requests that a defensive response is almost automatic. In the case of vocational education, not all schools are receiving federal or state support for their programs, and those that do not have no incentive to provide data. Schools that do receive federal support realize that it amounts, on the average, to only one-sixth of what they have to pay to offer vocational education. Many of them quite seriously weigh the advantages of that amount of support against the conditions under which it is provided--including constant demands for data--and wonder if it is worth the effort. Some school districts have already dropped federal support for this reason.

So much for enrollment data. What does the local vocational education data base have with which to measure benefits to students? Not much, actually, but probably a reasonable amount of data are obtainable through research. Followup data at the local level ordinarily include little more than what are collected for state and federal reporting. These are heavily job-placement-oriented statistics--completers employed in the fields for which trained or related fields, employed in nonrelated fields, unemployed, or not available for placement because of continuing their education at higher levels or for other reasons. Federal reporting requirements call only for totals by eight broad occupational areas and by handicapped and disadvantaged.

Many individual instructors have more complete records of their former students, and some states attempt to collect additional data from all reported vocational education completers through mailed-out questionnaires. The availability of additional information, however, is so spotty and uneven as to be virtually useless for national collection and analysis.

The most glaring omission in followup data currently available at the local level is a measurement of benefits beyond the first year after completing vocational programs. There are few data that show job success or advancement or even placement after the first year for students who were not immediately available to be placed. Almost equally serious is the absence of data showing benefits other than employment. Contributions of vocational education to student maturity, communications skills, work attitudes, and entry into or success in other careers not directly related to the training field are widely claimed, but virtually no data are available even at the local level to support or deny such claims.

Also needed for adequate knowledge of vocational education benefits, but rarely available, are even the limited placement data related to student characteristics. Very few local schools, and equally few states, maintain records of students employed or not employed who are of one sex or the other, of one ethnic group or another, handicapped, disadvantaged, or gifted. In most cases, no one but the instructors or the students themselves know what vocational education has done for individual students. But it is this fact that opens up the possibility of a greater quantity and higher quality of followup data through research. Unlike course, program, and enrollment data, followup data are retrievable long after the training has ended. Up to a certain point, the older the data the better. In this sense, the data base is no longer at the local school; it is scattered. But the key to its retrieval is at the local schools in the presently inadequate--but nevertheless usable--classroom, program, and sometimes school lists of former students and their last-known addresses.

Vocational education financial data in most local schools include state and federal funds received, usually in a single combined total, and gross expenditures such as equipment, supplies, salaries, and travel. They do not ordinarily include indirect expenditures, such as administration and utilities, nor do they identify expenditures by course or program. The smallest unit of cost accounting in the great majority of schools is occupational area, such as agriculture or trade and industry. It is not possible in these schools to know the cost per instructional unit, per student clock hour, or for any specific training program such as farm mechanics or welding. The records kept are based on a roughly national set of guidelines adopted by most state legislatures or departments of education in which expenses are posted by category (instructional costs, administration, maintenance, etc.) rather than by instructional program.

What are greatly needed, and are available in some schools, are expenditure data by instructional unit related directly to income. These figures require a complicated bookkeeping system and probably can only be done by computer. With this kind of system, however, school districts can readily obtain computer printouts showing total actual expenditures, both direct and indirect, by class, program, occupational area, and total vocational education related to enrollments in each case and including the percentages of each expenditure from federal, state, and local funds. Federal and state percentages can be further divided into categories of support such as handicapped, research and demonstration, general support, or others. Dollar amounts can also be printed out.

There are any number of systems in operation capable of producing these data, most of them probably in large urban school districts and postsecondary institutions, but not necessarily. The most widely used system has been developed for postsecondary institutions by the National Center of Higher Education Management Systems (NCHEMS), supported by the National Institute of Education (NIE). This system has also been adapted to secondary schools and may eventually bring instructional-unit-cost accounting to all secondary and postsecondary institutions.

A problem that has caused both the U.S. Office of Education and state vocational education agencies a great deal of trouble is keeping track of encumbrances and unobligated funds carried over from one year to to the next. It is largely a state problem, but financial data at the local level are involved. Its only importance is in accounting for percentages of federal funds legally required to be spent for categorical purposes such as for special programs for the handicapped. Frequently such funds are obligated to be spent during a fiscal year, but for one reason or another they are not actually spent until the next fiscal year. The state may then appear to have failed to meet its legal requirement, although if the two years were combined the state would have done so.

Unobligated funds carried over from one year to another cause a similar problem. A state's total expenditure for one year, in which substantial funds were carried over from the previous year and very little remained unspent to carry over into the next, may greatly exceed the amount received from the federal government. If the percentage spent for one of the special categories is based on that year's federal grant, the state may actually spend a smaller percent of total federal funds than the legal minimum. Here again the problem disappears when funds are balanced out over two or more years.

This has been such an issue, however, that the federal reporting forms have been redesigned into a highly complicated financial-reporting procedure. In redesigning the forms to solve accounting and legal problems, the use of those forms for expenditure analysis has been largely ignored. The result is that at the present time local school financial reporting for vocational education does not contribute much of anything to a knowledge of program costs, and it is difficult to extract even the data that are meaningful. At the same time most schools use a categorical bookkeeping system, which adds virtually nothing to the availability of useful data for vocational education cost analysis. It may be possible to find enough secondary and postsecondary schools using automated instructional-unit cost accounting to obtain generalizable data, and this should probably be explored.

Professional personnel data at the local level are usually fairly good in providing such characteristics as certification, education, experience in the field, age, sex, and courses taught. This is far more than most states and the federal government collect. Two critical elements, however, are usually missing. One is the extent to which knowledge of technical practices in the field being taught is current, including kinds of equipment and skills needed by students for employment today as compared to those needed when the instructor worked in that field. The most conspicuous example is data processing, where several new generations of hardware and software have appeared during the past 10 to 15 years. An instructor who had not gone back and spent time working in the field almost annually would become partially obsolete in the knowledge and skills needed to teach the subject.

The other missing element in most schools' vocational education data base with respect to instructional personnel, although it is well known to local administrators and teachers, is the availability of new teachers. It is widely reported that vocational teachers are in short supply, but the extent of shortages in each occupational area or program and in different geographical areas is ordinarily not known. Data are available in training institutions on numbers of new instructors being prepared, although these data are often lacking in occupational detail. Neither the supply side nor the demand side of the picture is adequately established at the local institutional level, and this is where knowledge of the supply, at least, would be most reliable.

Data at the State Level

Traditionally vocational education data of all kinds--student enrollment, followup, financial, and instructional personnel--have been obtained by asking local schools to supply certain figures. These were compiled by hand at the schools and sent to the state agencies, where totals of all schools in the state were again compiled. It was a manual process all the way. Neither school totals nor state totals had much documentation, merely the paper files from which they were assembled, and these ranged from teacher's class registers to mental calculations of placements based on memory, to the variety of records kept by state supervisors of agriculture, distributive education, etc. It was a system almost guaranteed to produce data at the state level with substantial percentages of error, most of which would probably be unintentional, but with such an open invitation to abuse that it would be naive to suppose none occurred.

In the past 10 to 15 years more than three-fourths of the states have adopted some kind of automated data systems in vocational education reporting, but as recently as a year ago there were still 10 states compiling their data entirely through traditional manual systems. Three of these were planning to automate, but the others were either too comfortable with the way they have always collected their data to want to change or they felt they didn't have the money or staff necessary to do so. In most cases they have believed, correctly or not, that they cannot affort to use computers. Some of the computer systems are expensive, but both hardware and software costs have been drastically reduced in recent years. Until those states decide to shift some portion of their funds into automating their reporting systems, they not only report data whose quality is doubtful, but they are incapable of reporting more than just the few gross statistics required in the past by the U.S. Office of Education.

How reliable are the data from these states? Beginning with student enrollment data, they are probably inflated by up to 30 percent for those programs in the schools they intend to report. This is the size of the drop in total students enrolled found in a few states when they converted their manual systems to automated. On the other hand, these states may fail to include enough programs that inflation of what they do report is balanced by underreporting. And since these are all relatively small states, neither overreporting nor underreporting would significantly affect national statistics.

Even though the number of states still using manual reporting systems is small, and they have relatively small populations, by no means do all of the vocational education data in the other states come from automated systems. Most states have only partly automated information systems. Enrollments are usually automated first, but in many cases only at the secondary level or only for part of the state. Only a few states have automated followup data systems, and the same is true of financial data and professional personnel data.

There are also wide variations among states in the kinds and amounts of data they obtain through automated systems. Many of them collect little more than what they are required to report to the federal government. Even when they do collect additional data, they sometimes fail to develop the computer programming needed to print out what they have in useful tabulations and summaries.

Very few states do much in the way of enrollment analysis by computer, printing out, for example, the percentages of students in different minority groups who are enrolled in lower-paying occupational programs compared to the percentages enrolled in training programs leading to higher salaries. A number of them have this capability. There are a few states with management-information systems complete enough to provide a great deal of information about comparative enrollments, placements, and costs among different school districts, different geographic areas, different socioeconomic areas, different kinds of students, and different occupational programs. But they are still a small minority.

Data from automated systems, while usually much more accurate than those compiled by hand, still have very limited usefulness outside of each individual state they represent. Nonuniformity across state lines is a serious problem even for the statistics required for federal reports. It is no better, and usually worse, in data not required for federal reporting. Followup data, for example, which include student response to the training provided may vary from "Did your training help you to obtain your job?" to "Do you feel you benefited from your training?" to "Has your training helped you in other ways than getting a job?" Occupational training other than vocational education may include only advanced industrial arts and general business in some schools while in others it includes music, art, dancing, and writing, and these variations among schools are carried up to the state level where the vocational education data base is broad enough to include data of these kinds.

The problems with the automated state systems that do exist are almost entirely political, not technical. Most of those that are limited to only one or two kinds of data, such as enrollment and followup, and to few if any more data elements than are required for federal reporting, could have systems as complete as any other state. There is simply more opposition, whether on grounds of economy or policy or simply lack of concern, than support for more complete information. Two arguments are invariably heard in opposing a better data base at the state level, as they are at the federal level also. One is that it costs too much, and the other is that it can't be done. Both are usually based on ignorance and reflect either inertia or a proprietary attitude about information the public is entitled to have. There are those who simply do not want to make the effort to improve what they are doing, and some simply prefer not to make any more information available than what they themselves wish to make available.

With this variety of automated information systems, to what extent are the data they produce reliable? The answer depends, of course, on the characteristics of each state's system. Some of them have very high levels of reliability. Some are little better than manual systems. But generally speaking, the data are fairly reliable within the boundaries of what they represent. Enrollment data, for example, are reasonably accurate as numbers of students enrolled in specific vocational programs in a state like Ohio, and they are also fairly accurate as numbers of students enrolled in all vocational education courses in a state like Arizona. Reliability of data depends entirely on what they are supposed to represent.

One of the most important results of automation is that data not collected by the U.S. Office of Education are now available in almost every state with an automated information system, and although this fact is generally understood, its significance is often overlooked. Most states with automated systems, for example, were collecting sex and ethnic data when USOE dropped its requirements to collect these for several years. Most states with automated followup systems usually collect placement data by program or occupational objective, whereas the federal reports only require these data within broad categories of occupational areas.

The single most important category of data every state has that USOE does not collect are definitions of the data they do report. Included with definitions, which are known but not always clearly established, is what each kind of data is supposed to represent. It is not so much a matter of neglect by USOE in obtaining this information as it is the inability of most states to reduce it to statements of fact. There has been and still is a serious communications gap between those in the states who collect the data and compile them for federal reporting and those in USOE who are responsible for analyzing and interpretating these data for management purposes, for use by Congress, and for the public.

Standardized forms simply have never succeeded in making available at the federal level an accurate account of vocational education as it takes place in each of the states, and to depend solely on this means of reporting, even with the additional descriptive reports that have been required and the accountability reports required under the 1976 legislation, would perpetuate a knowledge gap of where each of those data elements originated, how they were compiled, what they mean, and why they may be significantly different one year from the preceding year. Without that knowledge, neither can an adequate assessment of the data bases in the states be made, nor can the data obtained be adequately used.

The problems of data compatibility among different states also illustrate the point made earlier that definitions of the data being collected vary widely from one school district to another and from one state to another. Secondary school enrollment data, for example, include students in grades K through 12 in some states, but are limited to 6 through 12 in others, 9 through 12 in still others, and 10 through 12 in a few. Data on the disadvantaged and handicapped have always been reported differently in different states. As noted earlier, secondary-level data include adults in some states and not in others. All adult vocational education is reported as postsecondary in some states. In still other states, it is divided between the two. The National Center for Educational Statistics recently found 27 states using different definitions of vocational education programs.

In some respects the situation appears almost hopeless, but in fact it is not hopeless at all. For all of the variations in definitions and in the quality and meaning of the data collected, they are usually not erratic. They possess a measure of continuity, of uniformity over the years. There are sharp increases and decreases in individual state reports each year, but there are almost always explanations that make it possible to average out such inconsistencies over two or three years or to recognize significant changes taking place in one or another of the states.

It is possible also, by knowing for example that expenditure data are underreported by approximately 25 percent in one state and by 10 percent in another, to come fairly close to actual costs. Knowing what each kind of data represents in each state leads to the national analysis and interpretation of these data with a reasonable degree of reliability. Conclusions based on the data are then sufficiently valid to support policy and funding decisions at the national as well as at the state levels. Very substantial improvements are needed in the state data bases, but until they are realized it is not to be supposed that those data bases are without a great deal of utilization value. They are much more valuable than has been evident in their limited use by the federal government.

Data at the Federal Level

Much has been said about the federal reporting system in vocational education, most of it critical, but with all its faults the federal data base has provided more information about this segment of American education at the national level than can yet be obtained about any other. It is full of inconsistencies, and the data can only be used with great care and considerable knowledge of what they represent. But with that knowledge, and in spite of problems and inconsistencies, the Office of Education's data base of statistics from more than fifty states is fairly substantial. There are literally almost 3,000 cells of data on four forms covering financial outlays, teachers and teacher training, student enrollments, and completions and placements.

Financial data are broken out by level (secondary, postsecondary, and adult), expenditures for disadvantaged by level, handicapped by level, construction by level, research by level, exemplary (innovative) programs by level, consumer and homemaking by level and by depressed areas, cooperative programs by level and by disadvantaged and handicapped students, work-study by level and administration, and total expenditures by legislative purpose. Teacher data are broken out by level (full-time equivalent in secondary and postsecondary, full-time and part-time in adult), preservice and inservice training enrollments, and preservice and inservice completions.

Student enrollments are broken out by sex, level (preparatory, supplemental, and apprenticeship in the case of adults), cooperative, and completions for each of 180 occupational programs (many states use more--up to 400 occupations) plus the same breakouts for disadvantaged, cooperative, work-study, students from depressed areas, handicapped, and each of five ethnic groups. Completions are summarized at each level by eight broad occupational areas, as well as handicapped and disadvantaged. Completions are also broken out in followup data by status unknown, not available for placement (which is further broken out by continuing education at higher level, and other reasons), employed full time in field for which trained or a related field, unemployed seeking work, and other employment (employment part-time only or in a nonrelated field).

These reports are compiled in different ways by different states, as noted previously. Financial, teacher, and student-enrollment forms are due on November 30 each year after the end of the school year. Followup forms are due the following May 31. In practice, anywhere from a fourth to half of the states fail to get their November 30 reports in on time, and all but a handful are late in getting their followup reports in. The reports go first to the regional offices where they are checked for compliance and, if lacking something that might have been overlooked in their preparation, are sent back for completion.

In the BOAE in Washington the data are entered in a computer and printed out in a variety of summary statistical tables for publication and distribtuion. The annual tables are printed long after all of the state reports should have been received, so the data should be complete. But when a state simply has not gotten its reports in, the tables are printed with blanks for that state. It makes little difference nationally if the missing data are those of a small state like Nevada, but in 1973-74 California did not have its financial data in when the tables were printed, and as a result USOE's national tables were seriously inaccurate that year. Accuracy in this case means simply reproducing whatever the states report. Other inaccuracies occur virtually every year in the tables as a result of individual states amending their reports, sometimes by substantial amounts, too late for the BOAE to make revisions.

The biggest single problem with the USOE data base has always been its lack of quality control. Whatever the states put down, provided the proper cells on each form are filled in, is accepted. Even if states make unintentional errors, they are rarely noticed. If, for example, a state reports more secondary vocational education students than there are total students in the secondary institutions of that state, no one notices because the total number of secondary students is not included. If more black students are reported in vocational education at the secondary level than there are black students in all the high schools of the state, again no one notices. These are actual examples Project Baseline has encountered in the past.

Probably more criticism has been directed at USOE because of the design and nature of its forms than any other part of its data-gathering operation. Although some of this criticism has been deserved, much of it belongs elsewhere. The forms have had and still do have many shortcomings, some fairly obvious, others more subtle. The hope for a new era in federal collection of vocational education data and a national data base rests with the National Center for Educational Statistics and its congressionally mandated national vocational education data system. VEDS, still in development, hopes to have unit-based data in the system, that is, student-based enrollment and followup data and instructional-program-based financial data. At the present time there are two possible obstacles to accomplishing this. First, most of the states cannot supply such data because their own systems lack that capability. Second, those that do have the capability will have to restructure their systems to produce nationally compatible data. Neither of these obstacles need be permanent, but they pose real problems for NCES, problems that NCES recognizes will have to be solved on an individual state-by-state basis.

The one means by which NCES can solve these problems as well as many others, such as standardized definitions, quality control at the local and state levels, and shortening the time lag between each school year and that year's data availability, will be for Congress to provide the funds to do it. There is a provision in the 1976 legislation authorizing $25 million annually for the states to use for data collection and other purposes, and that full amount should be appropriated each year and used solely for data-systems development and operation. In addition, NCES should have funds for an adequate staff including personnel in the states to monitor and trouble-shoot as well as to provide technical assistance for states in which the current capability to produce reliable data does not exist.

In addition to the annual collection of vocational education statistics by USOE, the total current data base at the national level includes several surveys carried out by NCES in recent years. A directory of proprietary schools was put together several years ago, and a survey of occupational education in postsecondary schools was made more recently.

A completely different kind of NCES data collection, and one with much promise for vocational education, is the National Assessment of Education Progress (NAEP). Several subject areas have been examined in terms of the knowledge shown by a national sample of students at ages 9, 13, and 17. Included have been data on career and vocational knowledge, and the results have been published in a series of four national reports. These reports show only the general levels of knowledge of the total school population, not just vocational education students, but that in itself is a bench mark against which to measure future levels when NAEP repeats the career and vocational testing.

Another NCES study that has produced some significant national data about vocational education is the National Longitudinal Study (NLS). The data are from a national sample of the 1972 high school graduating class, both during that year and at intervals since then. They cover a broad range of questions, but the one of most significance to vocational education is that of the employment of students who had some kind of occupational training in high school compared to those who did not. It is important to realize that the only way those who had had training were identified was by their own statements. No effort was made to find out if their training was called vocational education or something else, therefore the problem of selection of training according to school or state policies was avoided.

No attempt was made to find out how extensive the training was, its length, or the level at which it was received. Obviously there are problems with this kind of loose identification. Nevertheless, the results do have some significance and were published in a 1977 report. Future reports from NLS using new cohorts (the classes of 1980 and 1982) will be much more valuable, because problems of student identification with institutions and courses of study are being eliminated. Courses and contact hours will be directly relatable to student outcomes in terms of employment from one to nine years after graduation.

Project Baseline has added another dimension to the national vocational education data base. To some extent the Baseline reports represent a synthesis of the data base, but they have also added data not previously in existence. The best example of this is the set of statistical tables in which the data collected by the Office of Education are displayed. These tables show various relationships among the data, and they also relate some of the data to population and employment figures, giving them more significance. And since Baseline was a longitudinal study, the data collected each year were compared with those of previous years to show trend lines and shifting patterns of performance.

One element that Project Baseline has contributed to the national data base and that has had both direct and indirect effects on the annual reports and the data they contain has been a certain amount of quality control. Project Baseline had no authority to judge any state's data, nor did it ever attempt to do so; but it did scrutinize those data, and when they appeared to have inconsistencies these were called to the attention of the states submitting them. In some cases the states then recognized mistakes in their federal reports and filed amended reports with the errors corrected. In other cases there were explanations for the apparent inconsistencies--as when one state lost a reel of data the first year it put its automated system into operation--and these explanations were included as footnotes in the Baseline Reports.

One of the most elementary steps taken by Project Baseline in quality control was to send the data tables back to each state when they were assembled to allow state personnel to see how they compared with other states and with their previous performance. Invariably several states each year, when they saw the tables, found mistakes which had been overlooked on their federal report forms. Whether those errors were always real or were merely perceived as opportunities to improve the appearance of a state's performance was not a concern of Project Baseline. The only requirement was that errors be corrected in only one way--by sending an official amended report to the U.S. Office of Education.

One additional contribution of Project Baseline has been to keep the national data base current. States not infrequently amend their reports as long as a year or more after they are submitted. USOE has had no way of changing statistics after they are printed for any given year. Baseline did. Each annual report in the Baseline series contained data from previous years. When the data were amended after one report was published, they were changed to reflect that amendment in the next report. Any current Baseline report thus became a better source of previous years' data than the documents published for those years.

Another Baseline product intended as a service to the states should also be mentioned as an addition to the national data base. In the 1974-5 report was a statistical profile of each state and with it a longitudinal statistical summary covering five years. These state profiles contain on a state-by-state basis the educational, population, and employment statistics which show in fairly compact form the scope and nature of vocational programs in operation. The longitudinal summaries show this over a period of time. Annual national profiles and summaries were also prepared, as well as regional summaries comparing states within each region.

Data-Base Improvement

A number of improvement in the Vocational Education data base are underway at all levels, the most important being under provisions of the 1976 legislation. Chief of these is VEDS, but each of the states has new obligations under that law to collect data not previously required and in much greater detail. The new data are very explicit, and they are mandatory to meet the new planning requirements and to prepare annual accountability reports. Some of the states have little difficulty in meeting the new data requirements, because those data are already in their management-information systems. Other states are no doubt beginning to add them to their systems. How much progress is being made and how soon all states will have the required data is not known, but from spot checks in several states it would appear that progress is slow.

The one major segment of state data needed for planning and for which the educational agencies are dependent on the Department of Labor and state employment services, is employment market demand. These data in the past have been generally so unreliable that their use in state planning represented little more than an exercise in futility. Some states, notably Oklahoma, have pioneered the development of more reliable employment demand data, and the U.S. Department of Labor has had programs underway to improve this part of the data base. How much improvement has yet taken place is debatable. Apparently there are efforts which are producing beneficial results. The National Manpower Institute, however, which first brought national attention to the almost worthless employment demand data being provided at state and lower levels, says the situation is still far from satisfactory.

In efforts to improve the vocational education data base at the national level, whether by NCES, NIE, or any other agency, one point is fairly critical. They must have the cooperation of the state vocational education agencies. Simply stated, this means that state directors of vocational education not only must be consulted, their participation must be obtained. Surveys of total school populations like NAEP and NLS can be made without involving state directors of vocational education, although not without involving the chief state school officers. But any attempt to collect data within a state on vocational education programs, students, expenditures, and teachers, without the support of the state director of vocational education--and either through or with that person, the approval of the state superintendent--would almost inevitably fail.

The reasons for this are simple. The data local schools usually have available are those required by the state, and any additional requests not endorsed by the state are likely to be ignored or at least resented; data obtained under these circumstances will often lack the attention to accuracy required to make their collection worthwhile. Federal surveys in the past, notably the secondary and postsecondary vocational education survey of 1972, conducted without state-agency involvement, have resulted in substantial quantities of data which represented simply figures hurriedly pulled out of memory or guessed at in order to complete the questionnaire as quickly as possible.

The single most important improvement of vocational education data in the past decade has been through the development of state management-information systems using computer data processing. The great majority of such systems use unit-based data, which enables them to identify student characteristics with occupational programs, completions, placement, and in some cases cost. There are numerous other analyses that can be made with unit-based data, and a few states are making some of them. Their capability of doing so is increasing. In addition to far greater analysis capability, automated systems almost invariably result in better data. More attention is given to quality control in obtaining the data, and errors in processing are reduced virtually to zero in properly operated systems.

This is repeatedly made apparent when states first adopt automated systems. Their totals rarely show the same patterns that have been shown in previous years when manual systems were used. Many states find a marked decline in the number of unduplicated students enrolled, resulting from their inability to obtain such a figure through manual systems except by guessing, and they almost always had been guessing too high. Occupational area totals, such as agriculture and trade and industry, usually have sharp decreases or increases in the first year of automated data processing, as do those of special categories like handicapped and disadvantaged, work-study and co-op, secondary and postsecondary, and adult.

In a few states vocational education data have improved through state auditing requirements. Ohio, for example, audits expenditures and enrollments in each school in the state every five years. Kansas audits followup data in each school, because state funds are disbursed on the basis of minimum placement percentages. Under the 1976 federal legislation, state audits of expenditures and state evaluations of performance must be carried out in each local educational agency once every five years. When such audits and evaluations are strictly third-party operations by experienced organizations using established professional standards, there is little doubt of the quality of the data being obtained. That these conditions will prevail can only be hoped for, not assured. Federal or third-party monitoring of the state data bases will have to be performed if the full benefits of periodic audits and evaluations are to be realized in consistently high-quality data--not because the states are not to be trusted, but because of the constant opportunity for human error.

Another very important reason for improvement in state data bases has been, and may be expecetd to continue to be, the emergence in recent years of professional data specialists. In some states these are the individuals who have designed the automated management-information

102

systems and oversee their operations. In other states certain management personnel have been given responsibility to oversee data collection from local schools and to make them available for state purposes and to others including the U.S. Office of Education; these people often become conscientious and expert in their work. In a few states this function is still performed by the state director, and sometimes the state director has become more of an expert in matters of data than anyone else on his or her staff. Whoever it is, this person in many of the states has succeeded in bringing about substantial improvements in the vocational education data simply through giving a major part of his or her time to working with those data and monitoring their quality. This person, more than any other at the state level, is likely to know the sources of each of the data elements, what those elements mean and what they do not mean, what they represent compared with previous years, and how they change from one year to the next. In most states, no assessment of the vocational education data base at either the local or state levels can be made without this person's assistance.

Project Baseline, as noted earlier, adopted a policy at the beginning of its study of sending all data collected from each state back to that state in the form in which they would be published. The states were then able to check the accuracy of their data as they were to appear in the Baseline tables and could also see how their performance looked compared with other states of similar size and location as well as with the national norms. This procedure does add time to the research, but Baseline's experience has been that the additional time is a small price to pay for better data. It has led to the correction of numerous errors and to additional checking of data by the states. The greatest advantage gained from this practice was the confidence of the states in the research itself.

The Data Base and Policy Concerns

Certain issues have been endlessly debated by academic educators, vocational educators, administrators, and sometimes in Congress. From one perspective it can be argued that these issues all stem, in part, from the nature of the current data base in vocational education. Lack of uniform and complete information leads to ambiguity, which in turn creates confusion for decision making. This point can be further elaborated by considering some current policy questions in the field of vocational education. The list presented is suggestive, not definitive. It does, however, include important issues for which data is not presently available.

One of the first questions that needs to be asked is whether federal support for vocational education should be provided primarily for the purpose of job training, as under current legislation, or for the economic security of youth and adults regardless of whether they go into fields for which they are trained as their primary careers, or as an investment in increased productivity by those who receive vocational education (a new concept in the use of federal support) or for all three purposes.

Job training can mean economic security for youth and adults, but it does not necessarily have to mean employment in the field for which trained or even employment at all. Women, for example, who take secretarial programs, nursing, or anything else and who neither intend to seek employment nor become employed but have successful married lives, may contribute more to their families and to the nation's well-being by knowing they are trained and can obtain salaried employment if they want to or have to. And even when unemployed, are youth and adults better off if they have employment skills (and, therefore, employment potential) than if they do not?

Another national interest in vocational education has been largely overlooked altogether. Increased productivity in American business and industry would restore some of the competitive position American products once had with a long list of foreign manufactured goods. Whether vocational education contributes to increased productivity or is capable of making that contribution is something in which Congress would probably be very much interested. The possibility does exist. A look at the vocational clubs in each occupational area suggests that it does. There are other data to be explored that would contribute at least some of the knowledge that is needed. To answer this question complete data are needed on (1) skills (occupational and nonoccupational) and attitudes possessed by vocational education students compared to the national population samples such as those in the NAEP survey, NLS, and national public-opinion polls; (2) the characteristics of vocational club membership which affect productivity rates in the occupations represented; (3) economic studies relating vocational education training to levels of productivity and effects on the GNP; and (4) employer evaluations of employees from vocational education programs in states and communities where these exist.

This issue in turn leads to another. How much of the support of vocational education is in the national interest as compared with strictly state or local interest and, therefore, should be supported with federal funds? Federal support is based on the existence of a national interest, otherwise there would be no justification for the federal government to be involved in this or any other educational program. Sixty years ago the national interest was business and industrial expansion, and from that evolved the need for trained manpower to help strengthen and expand the American economy. In 1963 the national interest included reducing unemployment through training and retraining the unemployable. Without raising the additional questions of a broader national interest, how much of a share in the cost of vocational education should be considered adequate to support the existing national interest in trained manpower for American business and in reducing unemployment? The current ratio of federal to state and local expenditures is about one to six. Is national interest in vocational education actually as little as this would suggest? If it be shown through hard data from a sample of LEA's in each state that unemployment is reduced by several percentage points for vocational education students, as current soft data do show, is that worth only one-sixth of the cost of vocational education? Is not a much greater cost incurred in employment and training programs administered by the Department of Labor for those who failed to receive vocational education? The National Advisory Council on Vocational Education has been raising this question for years.

The question of federal involvement and lack of data for decision making also emerges in two areas, both dealing with special-needs populations. First, should federal support of vocational education be restructured or redirected as a means of reducing inequalities among groups and individuals in having access to high-quality employment programs? This question is related to the uneven nature of vocational education performance among schools and among states, but it is also more specific. For any number of reasons, some students have access to many more kinds of occupational training than others, and this is only the first of a list of inequalities. Some programs are offered in modern facilities equipped with modern tools and machines, while others are old and partially or wholly obsolete. Some programs have better teachers. Some programs are offered as single courses or for a single year, and others for two years in sequence. Some students have vocational education programs as near as their local high schools; others must travel some distance to take vocational education in a central skill center.

Some of these inequalities are trade-offs; for example, the need to travel every day to a skill center may be balanced by a much larger choice of well-equipped and well-taught programs. Nevertheless, a great many inequalities do exist for which there are no compensating factors. Many students in the U.S. simply cannot enroll in the vocational education program of their choice, or for which they may be best suited, or for which the best opportunities are waiting in jobs and careers, simply because where they live those programs are not available. This situation is known to exist, but the extent to or seriousness with which it affects youth and adults (especially those who are handicapped, disadvantaged, or members of minority groups) is not known.

There is a need, at the very least, to determine the percentages of persons in each state (and of females, ethnic minorities, inner-city residents, rural students, and the handicapped) who do not have access to even a minimum number of vocational programs because they are not offered in the schools they do or can attend. These data would not be difficult to collect, and could be obtained either from the analysis of existing program distribution related to population patterns in each state or as part of the data collected from a sample of LEA's in each state.

Another policy question revolves around whether or not accountability in vocational education should be weighted in favor of serving the disadvantaged, the handicapped, and minority groups as well as the earmarking of special funds for them. Congress, in its concern over the less fortunate, has legislated and appropriated funds to help them receive benefits from vocational education equal to what other students may receive. But in doing so, it has perhaps unintentionally retained a concept of accountability that penalizes schools and states for enrolling students in these categories. As long as almost the sole criterion for judging the success of vocational education is the number of completers placed in jobs, the fewer students with handicaps or disadvantages are likely to be enrolled.

This accountability question will probably continue to be ignored as long as it is only a theoretical possibility. But for local schools it is a very real situation, and while hard data may not be available to establish its effects, the relatively low levels of handicapped and disadvantaged enrollments in vocational education programs are certainly thought to be related to it in some way. Thus there is a need for data which would measure the relationship, if one exists. Through this kind of research, a significant contribution might be made toward understanding the persistently low percentages of persons in these groups to be enrolled in vocational education. Decisions to explore alternative ways to provide vocational education opportunities for these groups could then be made.

Indeed, all these issues lead to one overriding concern: Is additional federal intervention needed in state and local data systems? The 1976 legislation goes far beyond any preceding congressional mandates for reliable information at the national level, and it spells out the data needed by state agencies for their accountability in careful detail. But it stops there as far as the states are concerned, leaving the implementation of state systems capable of producing the data up to the states and local schools. That is not entirely accurate, since an annual appropriation of $25 million is authorized to be used by the states for this purpose and since there is a provision in the NCES enabling legislation authorizing assistance in establishing and operating automated data systems in the local schools. But appropriations for the latter have never been made, and the $25 million included other state administrative costs. When a technical amendment removed the necessity to use that authorization for costs other than data systems, the U.S. Office of Education did not request an appropriation.

VEDS, as noted earlier, has been under development for over a year. Its goal of achieving what is clearly spelled out in the 1976 legislation will be difficult for a variety of organizational reasons mentioned earlier in this paper.

Why should anyone want to prevent free-flowing reliable information from reaching the public or Congress? The answer is as old as government. Whoever is given responsibility to administer a program using public funds invariably feels that no one else is as well qualified to report the results. Third-party reporting is a potential and often real threat to administrators. Periodic audits and program evaluations are also forms of third-party reporting, but they are only periodic, and unless they take on the character of an investigation, they are rarely exhaustive. Reasonably complete annual data, on the other hand, over which the administrator has no control even to the extent of selective use and summary reporting, are capable of indicating administrative weaknesses almost as soon as they appear and of showing their progression through the years.

Such annual data are also capable of revealing administrative success, and many administrators know this. They have no objections to third-party, free-flowing reliable data and often welcome this as the most convincing documentation of their own competence. But for every administrator feeling confident in what the data would show, there are several who prefer not to face the issue if it can be avoided. And this is undoubtedly the situation in vocational education, just as it would be in any other federal activity.

The constraints are many, complex, and interwoven. In the end, policy decisions are no stronger than the data on which they are based. Yet some knowledge, some statistics are better than none. For that reason, the most extensive possible use of the vocational education data base, in spite of its current faults and gaps, should be considered.

NOTES

[1] Actually in many states, and to some extent in all states, local boards are autonomous more in concept than in practice. They exist only as products of state constitutions, and their powers are often prescribed by state legislatures.

[2] For example, in Hawaii the Board of Higher Education has been designated as the state board for vocational education, and the state director is a member of the university administrative staff.

[3] Adult Work Skills and Knowledge, September 1976; The First National Assessment of Career and Occupational Development: An Overview, November, 1976; Basic Work Skills: Selected Results from the First National Assessment of Career and Occupational Development, January, 1977; and the Technical Report, May 1977.

EFFECTS OF VOCATIONAL EDUCATION PROGRAMS: RESEARCH FINDINGS AND ISSUES

John T. Grasso
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Introduction

This paper contains a review of available data and evidence from selected national surveys bearing upon vocational education issues. First, a brief introduction to the national surveys is presented, including introductions to salient research reports that are based upon each. In addition, because of its key role in this review, the identification of the high school curriculum of respondents in the national panels is discussed, revealing shortcomings and weaknesses that have indeterminate effects upon findings based on these data. Also, the case of female vocational students is discussed, suggesting that the vocational programs in high schools should be interpreted separately by sex.

Next, the review of empirical work commences, with findings presented on the high school students themselves: curricular differences in students' backgrounds and aptitudes, in attitudes toward school, in educational aspirations, in occupational goals, in occupational information, and on career development issues. Next, beginning with a cautionary note on methodological problems that arise from the fact that students change curriculum during their high school years, the review turns to topics concerning curricular effects in basic skills, on retention in high school, in transition to college and on educational attainment, and in acquisition of post-school training. Finally, the review closes with discussion of the effects of curriculum and training upon post-school labor market and psychological or attitudinal outcomes.

The National Surveys

This review and synthesis of data and evidence concerning vocational education concentrates on work stemming from the four major national longitudinal surveys of American youth conducted within the past twenty years: Project Talent, Youth in Transition, the National Longitudinal Surveys (of Labor Market Experience; NLS), and the Longitudinal Study of Educational Effects (LSEE; also known as the National Longitudinal Study of the High School Class of 1972). Following is a brief introduction to each project and the major studies that are based on each.

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According to the handbook issued by the Project Talent offices at the American Institute of Research:

> Project Talent represents the most comprehensive effort to date to investigate the personal, educational, and experiential factors that promote or inhibit the development of human talents. A longitudinal study of over 400,000 Americans who were in high school in 1960, Talent grew out of an awareness of the need for sound information about the processes by which men and women develop and use their abilities (Wise et al., 1977, p. 1).

Beginning in 1960, information was collected on the 400,000 respondents in grades 9 through 12 on their aptitudes, activites, interests, backgrounds, and school experiences, including information collected directly from their high schools. Also, aptitude and achievement tests were readministered three years later to those members of the original sample who were attending ninth grade in 1960. In addition, follow-up surveys of all the high school classes were conducted by mail in the first, fifth, and eleventh years after each class graduated from high school. Attrition from the original 1960 samples has been substantial: only about 49 percent responded in the first year after high school, and even fewer at the later follow-ups (i.e., about 33 percent at the fifth and about 23 percent at the eleventh). However, all the samples have been reweighted to permit use of the data. Project Talent also includes samples other than the 1960 high school probability sample: for instance, there are special samples of 15 year-olds not in high school in 1960 and of nearly every student in grades 8 through 12 in Knox County, Tennessee. A complete description of the Project Talent data collection has been compiled by Wise et al. (1977).

Although Project Talent data have been utilized for research in many subject areas, they have not been used extensivley with respect specifically to vocational education. The major usage of Talent data in this regard is a study conducted by Howard Vincent (1969) for the U.S. Office of Education, Office of Program Planning and Evaluation. Although the study addresses questions about the effects of vocational education on retention in school and on post-high school work experience, it could not be described as a comprehensive or remarkable study, and it has not enjoyed wide distribution.

In addition to Vincent's work, the other research using Talent data that bears upon the substantive domain of this review is discussed at the appropriate time below. These include Combs and Cooley (1968), Cooley and Lohnes (1976), Evans and Galloway (1973), and a few reports issued by the Project Talent staff of the American Institutes for Research.

In terms of numbers of respondents, the Youth in Transition project conducted by the Survey Research Center, Institute for Social Research at the University of Michigan, is a far smaller project. It began with a national sample of about 2,200 Fall 1966 tenth-graders (but only males in public high schools). Youth in Transition data include follow-up information from interviews and mailed questionnaires for the end of the eleventh and the twelfth grades, and for the first and the fifth years following the high school graduation of the class. Perhaps because the Youth in Transition mailed follow-up questionnaires included payments to respondents, the latest response rate exceeds 70 percent, as compared with about 30 percent for the analogous Project Talent follow-up. A complete description of the project is presented by O'Malley et al. (1977).

To date, Youth in Transition data have not been used extensively except by the project's own staff. With respect specifically to vocational education, there is little information available at this time. A staff working paper entitled "Vocational Education--Its Place in Public High Schools" was completed in draft form in 1972 by Joseph A. Johnston and Terence N. Davidson; reportedly, the major focus of the paper concerned the counseling received in high school and its effectiveness for youth from various high school curricula. Although its authors plan to revise and extend the research, this study has not yet resumed, nor is the original working paper available. Some information about this study's findings was included in a report to the U.S. Office of Education, Bureau of Research, by Bachman (1972), and additional information has been generously supplied in private communications with Bachman and Davidson.

Beginning at about the same time as Youth in Transition, the National Longitudinal Surveys of Labor Market Experience (NLS) includes information on over 5,000 males aged 14 to 24 in 1966 and over 5,000 females aged 14 to 24 in 1968. This project is sponsored by the U.S. Department of Labor and is conducted by the Center for Human Resource Research at The Ohio State University and the Bureau of the Census. Eight follow-up surveys have been conducted to date with the sample of males, and seven with the females; additional follow-ups are being planned at this writing, as well as the drawing of new age-sex panels. For both the males and females, a special mailed survey of their high schools was also conducted in 1968. The field work consists primarily of personal interviews conducted by the Census Bureau field staff, and attrition has been low. Of the 5,225 young men interviewed initially in Fall 1966, 76 percent were interviewed in 1971, and 77 percent were reached for telephone interviews in 1973--the sixth follow-up. Of the 5,159 women interviewed initially in early 1968, about 90 percent were reinterviewed in 1972--the fourth follow-up. Another feature of the NLS should not be overlooked. The initial sampling design included provision for oversampling the black population to facilitate analysis within or between whites and blacks. More complete information on the NLS is contained in the data bank handbook (Center for Human Resource Research, 1977).

Usage of the NLS data has been extensive, particularly by economists, and includes three major studies concerning vocational education. The first of these was completed by Stromsdorfer for the National Planning Association (1972), and results are also reported in Lecht (1974). This study confined attention to males and touched upon retention in school, transition to college, and post-school economic outcomes. The other two NLS studies (Grasso, 1975; Grasso and Shea, forthcoming) cover the same issues and additional topics. In Grasso (1975), attention is also confined to males, and a review and critique of Stromsdorfer's economic analysis is included. In Grasso and Shea attention is paid to both males and females, and also to both blacks and whites, with respect to curricular differences in retention and persistence in school, and a wide variety of post-school outcomes. Because of its wide scope, the work of Grasso and Shea figures importantly in the review below.

The most recent of the national surveys is a project of HEW's National Center for Educational Statistics (NCES). Significant portions of the project have been conducted by Westat, Inc., Rockville, Md., the Education Testing Service, and the Research Triangle Institute. Perhaps because of the diffusion of project activities, the project is seldom identified by its initial title, the Longitudinal Study of Educational Effects (LSEE). Frequently it is called the National Longitudinal Study of the High School Class of 1972, inviting confusion with the NLS project of the Department of Labor (DOL) described above. In 1972 a national sample of over 18,000 high school seniors in over 1,000 schools were administered questionnaires and/or test batteries; special questionnaires were also completed to collect information about the high schools and their counseling programs. In the follow-ups conducted by both mail and personal interview in 1973-74, 1974-75, and 1976-77, response rates have been high. In the first follow-up, the sample was actually expanded (from about 17,000 who completed the Base Year Student Questionnaire to over 21,000), and over 90 percent of those in the first follow-up also participated in the second.

Despite the recency of its inception, the LSEE enjoys a moderate degree of use as described in a recent annotated review by Peng et al., (1977). Indeed, a number of very recent studies bearing on high school curriculum and vocational education are presented there that could not be obtained for use in this review. Among those that are included are several reports produced by the Educational Testing Service (ETS) on curricular differences in student characteristics, aspirations and plans, and educational and early economic outcomes (Creech, 1974; Echternacht, 1975; Freeberg and Rock, 1975; Creech et al., 1977). In addition, private communications have elicited information on a study now in process by David E. Wiley (CEMREL, Inc.) and William H. Schmidt (Michigan State University) that examines the effect of high school programs on academic achievement, as well as issues in the curricular classification of high school students. Of the studies not included in this review, a few reportedly contain research on curricular effects upon college entry, retention or withdrawal in college, and initial post-school labor market experience (see Peng et al., 1977).

Of course, there are many other national panels that include current or former students in vocational education programs, some of which have already been used in studies concerning vocational education. These include data on students and alumni of proprietary schools (from a project by the American Institutes for Research), on 15-year follow-up of high school sophomores (Johns Hopkins' Explorations in Equality of Opportunity (EEO)) on high school seniors in ten states (Project SCOPE), and on 32,000 eighth- through eleventh-graders and 23,000 twelfth- through thirteenth-graders (American College Testing samples, ACT from the Career Assessment Program). In one project, the National Institute of Education attempted to manage some of these diverse data sources by organizing the files under the supervision of Ivan Charner. In another, the U.S. Office of Education Bureau of Occupational and Adult Education with William C. Conroy, Jr., reorganized portions of Project Talent, an American Council on Education file on postsecondary students, and LSEE data. Although it was not possible to review all of these files for their utility in future studies on vocational education, the following review includes some information from completed studies that used some of these data.

High School Curriculum

The identification of the high school curriculum of respondents in the national surveys is problematic. In Project Talent youth were asked to select from a list (i.e., General, College Preparatory, Commercial or Business, Vocational, Agriculture, Other) the curriculum most like the one they are taking or had expected to take. This asks for a combination of current status and intent. In addition to this ambiguity, the "General" program was interpreted for the respondent as "a program that does not necessarily prepare you either for college or for work, but in which you take courses required for graduation and many subjects that you like." This characterization may have influenced the responses, for both males and females were significantly less likely to associate themselves with a general program in Project Talent than in the NLS or LSEE (see Table 1).

NLS respondents were asked whether their curriculum was vocational, commercial, college preparatory, or general, and, if vocational, to name the specialty. A classification problem arises in the case of NLS males, where there is no entry for auto mechanics, automobile body repair, or agriculture among the coded specialties produced by the Census coders from the open-ended responses, despite the national popularity of these specialties. This thwarts utilization of detailed curriculum categories in any analysis of these data. Neither did the NLS High School Survey ask for information from the school concerning the student's program, which might have corroborated the respondent's answer.

In LSEE both respondents and schools were asked to describe the program of study. As might be expected, responses are not always in agreement with one another (see Table 2). The LSEE also contains detailed information about actual courses taken, permitting an independent categorization of the programs. In the ongoing Schmidt and Wiley study, mentioned above, such work is underway. For example, they classify programs as occupational provided that they contain more than one year of what appears to be vocational courses. In personal communication, Schmidt reveals that there are substantial disagreements among all three schemes--the school's report, the student's report, and the course-based coding system. Schmidt indicates that neither the administrators' nor the students' reports adequately describe the pattern of courses.

TABLE 1

Distribution of High School Seniors by Curriculum and Sex, from Three National Surveys

Curriculum	1960[a]		1966, 1968[b]		1972[c]	
	Males	Females	Males	Females	Males	Females
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
College prep.	45.5	32.4	45.8	43.1	45.3	40.5
General	26.5	20.7	40.1	34.6	34.6	31.1
Vocational	28.0	46.9	15.0	22.3	20.1	28.4
Bus., off., comm'l.	7.7	41.8	3.3	18.9	5.9	20.9
Other	20.3	5.1	11.7	3.4	14.2	7.5

[a] Data from Project Talent, derived from Flanagan et al., 1964, p. E-2.

[b] Data from the National Longitudinal Surveys: males in 1966, females in 1968.

[c] Data from the National Longitudinal Study of the High School Class of 1972 (LSEE). Fetters, 1975, p. 21. Figures are based on self-reports.

TABLE 2

LSEE Curriculum Classifications

Student's own classification	Survey administrator's classification		
	Academic	General	Vocational
Total[a]	100.0%	100.0%	100.0%
Academic	78.2	19.9	7.6
General	17.7	59.5	26.2
Vocational	4.2	20.6	66.1

Source: Fetters, 1975, p. 4

[a] Detail may not add to 100 percent because of rounding.

The reader who is familiar with the possibilities will not find this information surprising. The basis of administrative classification varies from place to place. The student's self-report is a function of his self-perception, his future plans, his peer group, and--in the case of the NLS--his reaction to the experience of a personal interview.

In the absence of any better alternative, the analyst who wishes to undertake research with the national surveys must somehow take account of the possible effects of the problems in curricular identification. Only with LSEE and Project Talent will he know anything about the intensity (i.e., the number of courses per year) or duration (in years) of the program taken by "vocational" students. Only with LSEE will he know whether the student participated in a formal cooperative or work-study program. He will not know whether the "general" curriculum refers to attendance at a single-track high school, or whether the student has taken courses in "general business," "general industrial arts," or other practical arts subjects not associated with the federally-aided vocational track. In connection with this last point, it is noteworthy that Todd's (1969) study in Cicero, Illinois, employed this distinction and discovered that general industrial arts graduates earned more per month after one, three, and five years than did the other groups of high school graduates in the study, including vocational graduates. Although Todd's study was limited to a small geographic area, its research strategy appears to be sound, and its findings merit attention owing to their potential educational implications.

What are the implications of the foregoing for interpreting work that is based on the national surveys and that uses self-reported curriculum? On one hand, self-reported curriculum appears to be inappropriate for investigating effects of the program of study, as long as the program is conceived to signify the content of a series of courses. On the other, self-reports may be used as long as the program of study is conceived to signify the student's orientation to the high school experience.

This latter conception is more compatible with the purposes of some types of basic research than it is for evaluation of the effects of federal dollars expended for vocational education. The student in the Midwest who takes a federally aided program in vocational agriculture, with the intention of entering college in a school of agrictulture, as well as the student in the South who takes federally aided typing courses for use in college, are examples of individuals whose self-report may be "college preparatory." In these examples, whatever benefit is derived from the federally aided courses would not typically be associated with federally aided vocational education programs by analysts using the students' self report (i.e., "college preparatory," not "vocational"). Or, the benefits of taking non-federally aided general industrial arts for the purpose of developing vocational competencies may be mistakenly attributed to the vocational program by analysts using students' self-reports (i.e., in this case, the students may be reporting "vocational," not "general").

At the same time, the use of self-reports is likely to influence the findings of research. Factors such as socioeconomic level, aptitude, college plans, and self-esteem may be more closely related to the students' orientations than to the patterns of courses actually completed. Analyses of the correlates and consequences of alternative high school curricula may show, for example, stronger relationships using self-report than using content, owing to the common dependence of self-report and other social-psychological factors on other attributes. Hopefully, Schmidt's use of LSEE data on misclassification may illuminate the factors that are associated with discrepancies in the classification of high school students.

Female Students

Reducing sex discrimination in education is not just a good thing to do: it is required by law. Title IX of the Education Amendments of 1972 provides that "no person...shall, on the basis of sex, be excluded from participation in, or denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance."

In fiscal 1972, 6,422,115 female enrollments in vocational programs constituted 56 percent of the total enrollment. Consumer and homemaking accounted for two in five female enrollments in fiscal year 1975, and the vast majority of these were to prepare for nongainful work in the home. Relatively few of these enrollments (one in ten) were for gainful employment, as with dietician and daycare aide programs.

Within the federal-state vocational education statistics, enrollments are tallied in 130 instructional program areas. Ninety-seven of these specialties in 1972 were dominated by one sex (i.e., at least three-quarters were female). Women were a majority in 33 wage-earning program areas--nearly all in office work, distributive education (sales and related), and allied health (Steele, 1974).

Sex segregation is evident in data on enrollments by major program area. Although women accounted for about half of all enrollments in 1972, the only major program reflecting this division by sex was distributive education (see Table 3).

Sex segregation is also shown in more detailed data on enrollments by specialty area. A review of the 15 largest instructional programs for males and females in 1972 shows that, except for certain business and commercial programs, the largest programs for women are related almost one-to-one with the occupations where women are concentrated in large numbers (see Table 4). The specialty areas with substantial numbers of men contain, in most instances, only negligible proportions of women. These data are viewed with alarm by those who note substantial earnings differences between male- and female-dominated occupations in the economy It seems logical to hypothesize that vocational education contributes to sex inequalities in the labor market through sex segregation in enrollments, which leads to occupational segregation and earnings differentials.

TABLE 3

Enrollments in Vocational Education Programs by Sex, 1972

Program	Total Enrollments	Vertical Percentages		
		Total	Female	Male
Agriculture	896,460	7.7%	5.4%	94.6%
Distribution	640,423	5.5	45.3	54.7
Health	336,652	2.9	84.7	15.3
Home economics	3,445,698	29.7	91.6	8.4
Office	2,351,878	20.3	76.4	23.6
Technical	337,069	2.9	9.8	90.2
Trades and industry	2,397,968	20.7	11.7	88.3
Special programs (disadvantaged, handicapped, etc.)	1,304,619	11.2	44.7	55.3

SOURCE: U.S. Office of Education, Summary Data (1973).

TABLE 4

Enrollment in Vocational Program Areas by Sex, Fiscal Year 1972[a]

15 largest instructional program areas	Total enrollment, men and women	Total number	Percent of total
		Women	
Steno., secy. & related	550,686	528,863	96.0%
Typing and related	628,414	500,517	79.6
Filing & office machines	398,226	327,454	82.2
Accounting & computing	351,861	210,255	59.8
General merchandising	204,861	104,582	51.1
Practical (voc.) nurse	82,896	78,302	94.5
Business data-processing systems	156,748	76,763	49.0
Care & guidance of children	77,158	71,586	92.8
Nurse (assoc. degree)	64,931	58,474	90.1
Food mgt., prod., & service	77,594	58,359	75.2
Clothing mgt., prod., & service	59,524	56,818	95.5
Nurses' assistants (aides)	58,903	53,308	90.5
Cosmetology	48,810	45,870	94.0
Textile prod. & fabrication	51,238	42,210	82.4
Real estate	82,111	26,165	31.9
Total (or average)	2,893,781	2,239,526	77.4%
		Men	
Agri. production	564,155	22,581	4.0%
Metalworking occupation	291,662	3,081	1.1
Mechanics, auto	228,364	5,299	2.3
Firemen, training	159,307	3,321	2.1
Accounting & computing	351,861	210,255	59.8
Typing & related	628,414	500,517	79.7
Agri. mechanics	128,795	1,408	1.1
Drafting occupations	126,750	6,892	5.4
General merchandise	204,681	104,582	51.1
Foremanship, super. & mgt. devt.	120,820	98,258	18.7
Carpentry	95,706	1,451	1.5
Electronic occupations	97,936	4,412	4.5
Electrical occupations	81,493	909	1.1
Business data-processing systems	156,748	76,763	49.0
Woodworking	84,709	5,373	6.3
Total (or average)	3,321,401	969,406	29.2%

SOURCE: U.S. Office of Education, Summary Data (1973).

[a] Enrollments exclude consumer and homemaking categories.

Studies on high school curriculum should therefore be designed to accommodate the possibility that the importance and meaning of "curriculum" differ among young men and women. As will be seen below, several studies on vocational education gloss over these possibilities by employing analyses of men and women combined. Such an approach reflects an implicit assumption that the process being analyzed is the same for men and women, which is inconsistent with many large bodies of literature.

Data from the NLS base year surveys are worthy of review. Among high school seniors, for instance, 15 percent of men but 23 percent of women say they were enrolled in either a vocational or commercial program of study. Women are heavily concentrated in white-collar, clerical programs, while men in occupational areas are congregated in blue-collar specialties. Relatively few males report a white-collar curriculum, and, for these few, the precise program area is probably distributive education (i.e., sales or marketing) rather than office or clerical work. Because of these differences, as well as for ease of exposition, we use the commercial designation when speaking of men who report such a program, and vocational for the men in other specialties. However, for women we use business and office in referring to women in white-collar, clerical programs, and vocational for women in other occupational studies (see Table 5).

Interestingly, women in the NLS failed to report home economics as a program of study. In 1968, home economics had the largest number of secondary-level enrollments in federally assisted vocational programs: nearly 1.5 million (Simon and Grant, 1973, p. 43). However, a negligible proportion of young women in the NLS report home economics as their curriculum: 0.6 percent of those enrolled in grades 10 to 12 in 1968. Evidently many women take home economics courses without perceiving this as their program of study.

Also on the basis of NLS estimates, approximately one million girls in grades 9 to 12 in 1968 were in a business or clerical program, a number not dissimilar from the number of federally assisted program enrollments in the service area designated as "business and office": 1.1 million (ibid., p. 43). However, a substantial amount of training in clerical skills--an area not eligible for federal aid until the early 1960's--must have been occurring without federal aid. For in addition to the women reporting a business and office program, well over half of the remainder of female respondents--or over 2.6 million more high school girls--reported having taken one or more courses in typing or shorthand. In fact, while 99 percent of high school business or office seniors say they had such courses, the same is true for about three-quarters or more of the remaining senior girls (see Table 6).

Moreover, while black girls were less likely overall to take such courses than white, nearly all of the difference by race is attributable to (1) the lower-than-average probability that a girl in a general curriculum has had typing and (2) the much higher proportion of black than white girls in a general rather than a college preparatory program (e.g., 56 percent of black high school senior girls were in the general track, as compared with 31 percent of white).

TABLE 5

Curriculum of Students 14 to 24 Years Old by School Grade, Sex, and Race

(N in thousands)

Curriculum	Whites				Blacks			
	9	10	11	12	9	10	11	12
			Men (1966)					
N[a]	840	1,493	1,475	1,315	153	212	195	147
Percent:[b]								
Vocational	5%	8%	12%	11%	6%	13%	18%	18%
Commercial	2	2	4	3	3	5	4	6
General	57	48	42	39	82	64	48	50
College prep.	36	43	43	48	9	18	31	26
			Women (1968)					
N[a]	1,488	1,780	1,420	1,164	215	229	176	180
Percent:[b]								
Vocational	1%	1%	2%	4%	4%	7%	2%	2%
Bus. and office	8	15	19	19	5	15	18	19
General	64	48	32	31	78	54	51	56
College prep.	27	36	46	46	14	25	29	24

SOURCE: National Longitudinal Surveys.

[a] Excludes those for whom curriculum was not ascertained.
[b] Detail may not add to 100 percent because of rounding.

TABLE 6

Percentage of Women 14 to 24 Years Old Completing One or More Typing Courses, by Enrollment Status, Highest Year of School Completed, and Race, 1968

Curriculum	Grade enrolled					Not in high school		
	Total 9-12	9	10	11	12	Total	Dropouts	Graduates[a]
	Whites							
All curricula (avg.)	55%	18%	50%	72%	82%	83%	63%	87%
Vocational	67	b	b	b	b	52	b	66
Business and office	85	24	82	99	99	99	93	99
General	52	20	50	86	87	79	57	89
College prep.	45	12	34	51	71	79	63	79
	Blacks							
All curricula (avg.)	49%	15%	42%	68%	75%	65%	42%	76%
Vocational	47	b	b	b	b	48	b	61
Business and office	86	b	79	92	99	92	78	97
General	41	12	31	71	69	59	38	70
College prep.	47	5	42	51	74	66	b	76

SOURCE: National Longitudinal Surveys.

[a] Includes high school graduates enrolled in college in 1968.
[b] Percent not shown; base less than 25 sample cases.

Status and Ability Differences

Several studies using the national surveys' data contain information on the characteristics of students in the different high school curricula. On the basis of Project Talent data, Evans and Galloway (1973) report that, on average, the vocational student ranks below the student in the general track with respect to socioeconomic level and ability, and that the college preparatory student ranks highest of all. Table 7, derived from published Talent data, reveals that male high school freshmen who were pursuing or expecting an occupational curriculum ranked below their peers in scholastic aptitude. However, in the data for females, young women in business and office programs do not conform to this trend. While about 40 percent of girls in the general track ranked above the overall median on the aptitude scale, this was true of about 45 percent of girls in business and office curricula.

Table 7

Academic Aptitude by Program of Study and Sex,
Ninth-Grade Students, 1960

Current or expected curriculum	Percent of students above total population median on Academic Aptitude Scale	
	Males	Females
College preparatory	77.4%	74.4%
General	44.4	40.1
Commercial or business	23.4	45.3
Vocational	33.3	25.9
Agriculture	31.1	7.9

Source: Project Talent data in Flanagan et al., 1964, p. E-2

In other work with Talent males, Cooley and Lohnes performed discriminant analysis in a "study of the predictability of the curriculum that the student followed through high school from factor scores collected in the ninth grade" (1976, p. 112). Findings were that verbal knowledge, scholasticism, and socioeconomic status are the best three predictors, with maximum separation obtained between the college preparatory students on the one hand, and the remaining groups, on the other (i.e., general, business, and vocational, in that order).

Of course, as indicated earlier, Talent data include the self-report that asks for current or expected curriculum and that involves a unique typification of the general track. Nevertheless, findings from the Youth in Transition project corroborate the pattern for males found by Evans and

and Galloway: "Vocational education students came from lower socioeconomic level families, on the average, than students in the lower curriculum categories....Similar differences were found in tests of intelligence, reading ability and vocabulary skills" (Bachman, 1972, p. 26).

Interestingly, data from the NLS and LSEE surveys show greater similarity between vocational and general students than that from Talent and Youth in Transition. Grasso and Shea analyzed NLS data separately, not only by sex but also by race, as follows.

Division by thirds simultaneously along dimensions of scholastic aptitude (SA) and socioeconomic origins (SEO) generates a table with nine cells. Approximately 11 percent of all respondents would be in each of nine cells, if the two variables were uncorrelated. The actual pattern diverges sharply--especially for blacks--from this hypothetical distribution (see Table 8). SA and SEO are positively related to each other, and the overall distribution for black youngsters in high school is considerably lower than it is for whites. For instance, while one in ten white students is in the lowest third on both SA and SEO, the same is true for nearly one-half the blacks. At the other extreme, one in five white youngsters is in the top third of both distributions, while only about one in fifty blacks is so advantaged.

The college preparatory population is advantaged on both SA and SEO. For example, among whites who are in the top third of both SA and SEO, over three-fourths are college preparatory students, while among those in the lowest third on both measures, less than one in ten are college preparatory students (see Table 9). Of course, this association between the college preparatory program and family background and ability seems to hold in all the national surveys. Interestingly, controlling for SA and SEO, blacks are more likely than whites to be in a college preparatory program, a finding also reported by Jencks et al. (1972, p. 35) with data from the Equal Educational Opportunity Study (EEOS).

However, of the remaining NLS high school students, the distribution of occupational students follows a pattern so varied that it defies ready interpretation (see Table 10). Among white males, the highest-ability students are less likely than their peers to be in an occupational program, except those from the lowest SEO families. Among the white females, with the exception of the high SEO third, being in a business or office curriculum is positively related to scholastic aptitude, possibly a reflection of the English language and other cognitive skills required by curricula emphasizing typing, shorthand, and bookkeeping. In any event, Echternacht's (1975) analysis of LSEE data also reveals mixed findings: general students ranked slightly higher than vocational students in academic ability, but the difference was statistically nonsignificant.

Attitudes Toward School

There are other dimensions in which curricular differences have been examined, such as in attitudes, education aspirations, and occupational

123

TABLE 8

Percentage Distribution by Socioeconomic Origin (SEO) and Scholastic Aptitude (SA) Thirds,[a] by Sex and Race; Enrollment in Grades 10-12, Base Year

Category	Whites			Blacks		
	Hi SA	Mid SA	Lo SA	Hi SA	Mid SA	Lo SA
			Men (1966)			
N (thousands)[b]	3,745 (=100%)[c]			326 (=100%)[c]		
Hi SEO	19%	12%	7%	1%	3%	2%
Mid SEO	13	15	10	3	6	22
Lo SEO	6	8	11	1	15	46
			Women (1968)			
N (thousands)[b]	3,605 (=100%)[c]			354 (=100%)[c]		
Hi SEO	20%	14%	9%	3%	1%	3%
Mid SEO	12	15	11	1	6	22
Lo SEO	4	6	9	3	10	51

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[a] SEO and SA thirds are approximate, and are based on all respondents in each sample (male, female) for whom SEO and SA were ascertained.

[b] Excludes those for whom curriculum, SEO, or SA was not ascertained.

[c] Detail may not add to 100 percent because of rounding.

TABLE 9

Percentage in College Preparatory Curriculum,[a] by Socioeconomic Origin (SEO) and Scholastic Aptitude (SA) Thirds, by Sex and Race; Enrollment in Grades 10-12, Base Year

Category	Whites Hi SA	 Mid SA	 Lo SA	Blacks Hi SA	 Mid SA	 Lo SA
			Men (1966)			
Hi SEO	79%	54%	44%	b	b	b
Mid SEO	69	40	23	b	b	35%
Lo SEO	50	16	6	b	35%	13
			Women (1968)			
Hi SEO	76%	64%	40%	b	b	b
Mid SEO	59	37	10	b	69%	20%
Lo SEO	34	16	7	b	22	20

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[a] Excludes those for whom curriculum, SEO, or SA was not ascertained.
[b] Percent not shown; base less than 25 sample cases.

TABLE 10

Percentage, Excluding College Preparatory Students, in Occupational Curricula,[a] by Socioeconomic Origins (SEO) and Scholastic Aptitude (SA) Thirds, by Sex and Race; Enrollment in Grades 10-12, Base Year

Category	Whites			Blacks		
	Hi SA	Mid SA	Lo SA	Hi SA	Mid SA	Lo SA
Men (1966)						
Hi SEO:						
Vocational	11%	19%	15%	b	b	b
Commercial	0	8	5	b	b	b
Mid SEO:						
Vocational	9	18	27	b	b	21%
Commercial	2	13	3	b	b	8
Lo SEO:						
Vocational	24	15	27	b	16%	23
Commercial	4	5	1	b	0	3
Women (1968)						
Hi SEO:						
Vocational	0%	9%	0%	b	b	b
Business and office	16	25	27	b	b	b
Mid SEO:						
Vocational	7	0	8	b	b	2%
Business and office	38	36	28	b	b	39
Lo SEO:						
Vocational	b	7	1	b	0	7
Business and office	b	47	22	b	49%	18

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[a] Excludes those for whom curriculum, SEO, or SA was not ascertained.
[b] Percent not shown; base less than 25 sample cases.

goals. Grasso and Shea's work with the NLS suggests that, overall, occupational students may be less likely to "like school very much," but this is not due to their occupational courses.

In the NLS base year surveys, the youth were asked about their overall attitude toward high school: "All things considered, how do you feel about your high school experience? Do you like it very much? Like it fairly well? Dislike it somewhat? Dislike it very much?" Among the male students, those in the college preparatory curriculum were more likely than the others to say they "like it very much": 50 percent; compared with 40 percent of the general and 35 percent of those in an occupational curriculum. (Only 6 percent of the entire group disliked high school somewhat or very much. The fraction of general students was 8 percent--somewhat higher than for all of the students.) White males in vocational programs were the least likely to express high satisfaction: only 29 percent. Among blacks, only the small number in the commercial area stood out as not highly satisfied: only 32 percent of the estimated 27,000 black students in the commercial area liked school very much, but this proportion was based on rather few sample cases. Among females, college preparatory students were again more likely than others to like school very much. However, differences between occupational and general students were slight.

Even so, when asked about courses liked best and disliked the most, very few males or females disliked an occupational course. Also, despite the fact that not everyone takes an occupational course in high school many youngsters name such a course when asked: "What high school subject have you enjoyed the most?" As one might expect, students in occupational areas were especially likely to name a vocational, commercial, or business or office course as the one they most enjoy: nearly half the boys (46 percent) and girls (47 percent) in occupational programs, compared with one-fifth in the general track and about one-tenth of college preparatory students. At the same time, among white males, the students in the lowest third on scholastic aptitude were more inclined than the more academically able students to enjoy occupational courses. For example, of whites in an occupational program, the proportions who enjoyed vocational subjects the most were 40, 30, and 31 percent for low, middle, and high thirds, respectively.

These findings may be meaningful in light of the argument that, for nonbookish youngsters, "hands on" learning is especially congenial for deriving value from school. Olson and Bruner (1974) suggest that schools convey knowledge mostly through symbolic processes, which they also argue has "led to a deemphasis of and a restricted conception of the nature and development of ability" (p. 126). They suggest that it is frequently overlooked that providing instruction primarily in nonexperiential modes (i.e., through symbolic encoding and decoding of vicarious experiences) probably disfavors those without well-developed symbolic skills. Since many students attracted to vocational courses may be less verbal than their fellow students, and since vocational courses involve less symbolism and more experience, they may find the experiential mode in the vocational program preferable to the alternative. Such a preference would be reinforced by differences in content between vocational and other courses, for the experiential student not aspiring to college may perceive postsecondary education as more of the same (symbolic) experience.

This logic also relates to what Bloom (1976) has called the "latent curriculum." Independent of the manifest curriculum (i.e., reading, mathematics, science, etc.), the school's latent curriculum "teaches the student who he is in relation to others." In some cases this means teaching the student that many of his peers perform better than he in the traditional mode. This may be important with advancing age: "Choosing what I want to learn" is of increasing importance to students from grades 4 through 12 (Johnson, 1974, p. 110).

At the same time, school personnel may urge these students both to forgo the academic program and to choose the vocational program. As Bloom points out:

> If students lack or vary greatly in their possession of the necessary cognitive entry behaviors (for the regular school program), there are a number of ways in which these gaps in their preparation...can be approached educationally....Perhaps the most frequent method of treating the lack of necessary prerequisites in the past has been to advise the student not to take particular courses (Bloom, 1976, p. 65).

Educational Aspirations

Data on the educational aspirations of high school students indicate that high proportions of the total student body are aiming for postsecondary education. The overall picture is that 62 percent of the white NLS males and 56 percent of the black NLS males say they "would like to get" four or more years of college, and the comparable proportions for females are 48 and 50 percent (see Table 11). In addition, nearly one in seven boys and one in four girls would like two years of college.

The data also reveal some interesting patterns by curriculum. White vocational males and black business and office females are relatively unlikely to desire four years of college, and white business and office females are remarkably unlikely to do so. These low relative proportions are seemingly consistent with the ostensible purpose of occupational studies. However, the proportions of young black men in occupational programs who aspire to four or more years of college is very high: 40 percent among the vocational students, 55 percent among the commercial students. These high proportions not only are seemingly inconsistent with enrollment in occupational programs, but also may be unrealistic.

Educational goals are fostered, in part at least, by encouragement and support from parents, teachers, and peers. Young women in high school in 1968 were asked about some of these influences. Those in the college preparatory program seem to have received high levels of encouragement

TABLE 11

Educational Aspirations, by Sex and Race; Enrollment in Grades 10-12, Base Year

(N in thousands)

Category	N^a	Percentage[b]		
		12 or less	College 2	College 4+
			Men (1966)	
Whites:				
Vocational	426	50%	28%	23%
Commercial	144	37	27	36
General	1,833	40	17	44
College prep.	1,887	3	5	91
Total (or average)	4,405	24	13	62
Blacks:				
Vocational	89	48	11	40
Commercial	27	23	22	55
General	303	33	21	46
College prep.	135	8	6	86
Total (or average)	572	29	16	56
			Women (1968)	
Whites:				
Vocational	96%	c	c	c
Business and office	751	52%	36%	12%
General	1,663	40	30	30
College prep.	1,830	6	16	79
Total (or average)	4,364	28	25	48
Blacks:				
Vocational	22	c	c	c
Business and office	100	35	38	28
General	312	35	22	42
College prep.	149	4	13	84
Total (or average)	584	28	22	50

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[a] Excludes less than one percent for whom aspiration was not ascertained.
[b] Detail may not add to 100 percent because of rounding.
[c] Percent not shown; base less than 25 sample cases.

and support in comparison with classmates. For example, 77 percent of the white girls in academic programs and 71 percent of the black reported that they believed their parents wanted them to achieve four or more years of college. The same was true of only 38 and 52 percent of the white and black girls in a general program, and of even smaller proportions of youngsters in occupational curricula. The same patterns of support are reflected in the NLS data on young men.

Occupational Goals

As with the data from the other national surveys, NLS data also show curricular differences in occupational goals. In the initial NLS interview, young men were asked: "What kind of work would you like to be doing when you are 30 years old?" Of those enrolled in grades 10 to 12, about one-fifth indicated "Don't know" or failed to respond to the question (see Table 12). Choice of an occupational curriculum seemingly presupposes an occupational orientation or career objective, but while boys in a vocational program are more likely than others to name a specific occupational goal, commercial students are least likely. Many commercial programs may follow a cluster approach, preparing young men for possible entry to an array of business, sales, or clerical kinds of work.

Of the males who revealed a specific occupational aspiration, a clear majority named one in the professional or technical area: 59 percent of all white male students, 52 percent of the black. Students in occupational programs were least likely to aspire to jobs at this high level (only about one-third); college preparatory students most likely (nearly four-fifths). The goals of general students lie between--closer to the pattern of those in occupational than academic programs. On the whole, the goals of young men are quite high, since only 15 percent of all employed men work in the professional, technical group (U.S. Dept. of Labor Employment and Training Report, 1977, p. 161). It might be noted that the NLS males who were out of school in 1966 with 10 to 12 years of education manifest considerably lower and perhaps more realistic occupational goals. Of this group, just over one-fifth of those naming an occupation aspire to jobs in the professional or technical category, and only one in six hopes to be a manager or official someday. Former occupational students, interestingly enough, are as likely (or more likely, in the case of blacks) to have uncertain goals.

With reference to the group in school, vocational men are considerably more likely than general to want a job in the craftworker category; commercial men often aspire to clerical or sales jobs. Within each curricular category, the aspirations of black youth are nearly the same as for white.

Young women were asked about their plans at age 35. After a lead-in, "Now I would like to talk to you about your future plans," the interviewer asked: "What would you like to be doing when you are 35 years old?" If the respondent said "working," which was true of almost one-fourth of white students and almost one-half of black, she was asked to name

TABLE 12

Occupation (Major Group) Desired at Age 30 (Age 35 for Women), by Curriculum and Race; Enrollment in Grades 10-12, Base Year[a] (N in thousands)

Category	Total (or avg.)[b]	Curriculum			
		Vocational	Comm. (or bus. and off.)	General	College prep.
			Men (1966)		
Whites (N)	4,439	429	126	1,842	1,906
Prof., tech.	59%	32%	31%	46%	78%
Nonfarm mgr.	6	5	11	5	8
Craft	18	43	15	27	4
Other	17	20	43	22	10
Don't know[c]	(20)	(6)	(37)	(23)	(20)
Blacks (N)	574	89	27	304	136
Prof., tech.	52%	36%	d	44%	77%
Nonfarm mgr.	5	3	d	5	1
Craft	19	41	d	20	7
Other	24	20	d	28	15
Don't know[c]	(18)	(17)	(26)	(21)	(7)
			Women (1968)		
Whites (N)	4,364	96	751	1,663	1,830
Prof., tech.	46%	d	6%	33%	74%
Clerical	37	d	80	40	16
Service	10	d	8	16	5
Other	7	d	6	11	5
Don't know[c]	(25)	d	(20)	(27)	(25)
Blacks	584	22	100	312	149
Prof., tech.	43%	d	24%	35%	74%
Clerical	37	d	63	40	16
Service	8	d	1	10	8
Other	12	d	12	15	2
Don't know[c]	(24)	d	(21)	(24)	(20)

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[a] N's include "don't know" and other non-occupationally specific plans; percentages for occupational categories, however, are based only on those who specified an occupational goal or preference, and may not add to 100 percent because of rounding.

[b] Includes small percentage for whom curriculum was not ascertained.

[c] "Don't know" and no data cases for men; "don't know" and other nonspecific plans (e.g. married and not working) are shown in the case of women.

[d] Percent not shown; base less than 25 sample cases.

the kind of work. If she said "married, keeping house, raising a family," or the like, which was true of about two-thirds of whites and one-third of blacks, a further question was asked: "Sometimes women decide to work after they have been married for a while. If you were to work, what kind of work would you prefer?" Even after this, some expressed no occupational aspiration (e.g., "Don't plan to work").

The pattern of responses, conceived as plans for work, was used for an index of intentions to work at age 35. Results with the index reveal substantial differences betwwen the races, for young black women were clearly planning for work more than were the young whites. However, there seem to be no differences by high school curriculum. This suggests that, although young women in vocational programs may be conceived as having a stronger orientation to a career than their peers, the effects of other factors on plans at age 35 must be taken into account, such as higher education, marriage, and motherhood. At the same time, enrollment in a vocational high school program may simply not constitute evidence of intentions to work in their thirties. For example, those in business and office programs may be developing skills primarily for use in the period immediately following high school.

With reference to those female students who specified a type of work desired at age 35, it is clear that occupational goals differ by curriculum. While 45 percent of all high school females desire professional and technical work, including teaching, this is true of only 9 percent of business and office students but of over 70 percent of college preparatory students (see Table 13). In addition, while 37 percent of all high school females desire clerical work, including secretarial jobs, this is true of only one in six college preparatory females but of more than three out of four business and office students.

In view of these differences, it is not surprising to find differences in measures that are related to the occupational goals. For instance, business and office students desire jobs that are stereotypically "female" jobs: 69 percent of them desire jobs in which over 80 percent of incumbents are female, while only 57 percent of other vocational students and only 54 percent of general students desire such heavily stereotypic jobs. The jobs desired by business and office students are also low-paying in comparison with jobs desired by their peers: 88 percent of business and office students desire jobs paying less than $6,000 per year, while the analogous figures for other vocational and general students are 51 and 67 percent, respectively.

However, regardless of curriculum, the jobs desired by these young women strongly suggest occupational segregation by sex. Occupational goals were coded in the NLS according to the 1960 Census occupational classification scheme. Although there are 297 possible codes, only the nine shown below are needed to account for over two-thirds of the job preferences of the girls in grades 10 to 12 in 1968:

TABLE 13

Occupation Desired at Age 35 by High School Curriculum: Females Enrolled in Grades 10-12 in 1968

Percent in selected categories	High school curriculum				
	Total	Vocational	Business and off.	College prep.	General
N (in thousands)	4,978	119	861	1,989	1,983
Major category:					
Prof. tech., kindred	45%	47%	9%	74%	33%
Clerical, kindred	37	11	77	16	40
Service workers	10	18	7	5	15
All other categories	8	24	7	5	12
Sex-stereotypic:					
Female jobs (80% or more of workers in the occupation are females)	53	57	69	46	54
Median occupational earnings:					
$8,000 or more	10	15	2	15	9
$6,000 to $8,000	28	34	9	41	24
$4,000 to $6,000	57	26	86	42	60
Under $4,000	5	25	2	2	7

Secretary (Code 342)	21%	Hairdresser (843)	5%
Teacher (182, 183, 184)	20	Sales clerk (394)	4
Clerical and kindred, n.e.c. (370)	9	Social and welfare worker (171)	2
Professional nurse (150)	8		
		Total, top 9 codes	69%

Moreover, despite great publicity about women's roles in recent years, these 1968 NLS data do not seem to be out of date. As reported in a recent Gallup Youth Survey, the top ten career preferences of teenage girls still include: secretary, teacher, nurse, social worker, cosmetologist/hairdresser, "other medical," veterinarian, fashion designer/model, doctor, and business. By contrast the top ten choices of boys, in order, were: skilled worker, engineer, lawyer, teacher, professional athlete, musician, architect, farmer, doctor, and military (Gallup, 1976).

Actually, the proportion of high school girls who expect to work outside the home may have risen over the past decade. In interviews with high school girls in Pennsylvania between 1964 and 1966, Kaufman found that approximately three-fourths said "housewife" in response to a question concerning the type of job they would like to have in 10 years (Kaufman, 1975, p. 5; citing 1967 study). In a more recent survey of seniors in several public high schools in Arkansas, only 23 percent of the girls agreed that "most girls will become housewives and never work outside the home" (Roby, 1976, p. 187). In the national survey of 32,000 youth sponsored by the American College Testing Program (ACT) in Spring 1973, 75 percent of eighth-grade girls said they "would like help" with making career plans. Among eleventh-graders, 79 percent gave the same response, suggesting that most girls expect not to limit their careers to homemaking (Prediger et al., 1974, p. 99).

Nevertheless, the occupational goals of girls are much more restricted than boys' and mirror the present "reality" of the labor market. The ACT study categorized goals into 25 "job families" and reported that "over half of the eleventh-grade girls choose occupations falling in only 3 of the 25 job families: clerical and secretarial work, education and social services, nursing and human care" (ibid, p. 100). Only 7 percent of the girls aspired to occupations falling into the "technologies and trade" cluster of job families, where nearly half of the boys' preferred occupations were located. (Similarly, 7 percent of the boys aspired to occupations in the 3 job families in which the girls' preferences centered).

The ACT study confirms a related observation--namely, that boys and girls differ in the kind of career exploratory experience they have while growing up. The survey contained 10 items dealing with such activities. Sex differences were substantial for half the items. More girls than boys in the eleventh grade report that they never "fixed mechanical things around home" (65 percent of the girls and 17 percent of the boys), "took a machine apart to see how it operates" (81 and 30 percent), or "did a science experiment that was not assigned in class" (68 and 50 percent). On the other hand, more boys than girls say they never "wrote a short story or poem outside of a class assignment" (51 percent of the boys and 29 percent of the girls) or "worked actively in a service group or as a volunteer aide" (53 and 35 percent) (Noeth et al., 1975, p. 124).

Career Choice

It might be hoped that the educational and occupational goals of high school students are based on reasonably accurate knowledge of the labor market, such as information about occupations and their education or training requirements, which should help them in choices regarding career directions, and the type and amount of additional schooling to pursue. Students who choose a vocational program in high school presumably have above-average need for career information. Such students are closer than their peers to the time when they expect to leave school. Decisions to pursue a vocational program involve considerable "choice." A prerequisite for making sound career decisions would seem to be the possession of adequate information about career possibilities.

In 1966, young men in the NLS were asked a series of questions under the heading "Knowledge of the World of Work" (KWW). In a multiple-choice format, each respondent was asked to identify the principal duties of workers in ten occupations and to state the typical education level of the incumbents.* Respondents were then provided eight pairs of occupations and asked to identify which one normally yields higher earnings.**

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*The interviewer asked: "I'd like your opinion about the kind of work that men in certain jobs usually do. For each occupation on this card (show Flashcard I) there are three descriptions of job duties. Will you please tell me which description you think best fits each job? Be sure to read all of the possible answers before you decide." To illustrate, response categories for stationary engineer were: (1) "Works at a desk, making drawings and solving engineering problems"; (2) "Drives a locomotive that moves cars around in a freight yard"; (3) "Operates and maintains such equipment as steam boilers and generators"; and (4) "Don't know." For each occupation a probe asked: "How much regular schooling do you think ______________ usually have?"

**The introduction was: "Now I'd like your opinion on whether people in certain occupations earn more, on the average, than people in other occupations. By average, we mean the average of all men in this occupation in the entire United States." This was followed by: "Who do you think earns more in a year; a man who is (1) an automobile mechanic, or (2) an electrician?" Space was provided for "Don't know."

Answers were scored from zero to 56. In 1969, young women were asked to identify the major tasks performed by persons in 10 occupations frequently held by women.* Respondents were scored on the number of correct answers (zero to 10). Within both sex cohorts, blacks scored somewhat lower than whites. Male occupational students scored lower than their peers, but female occupational students scored higher than theirs.

Here are some highlights of the results for young men. At one extreme, more than nine-tenths of all the male students were able to identify the principal tasks of an acetylene welder, a draftsman, and a social worker (see Table 14). At the other extreme, only 13 percent knew the duties of stationary engineers (i.e., most young men selected "works at a desk, making drawings and solving engineering problems"). Students also frequently misstated the educational attainment of men in various jobs. For example, over half the students thought draftsmen have four years of college, and 32 percent were under the impression that social workers average a high school diploma or less.

Only on one test item did the male vocational students significantly outscore their general curriculum counterparts (i.e., on "machinists"). Commercial students, on the other hand, did about as well as those in the general track. Interestingly, the college preparatory students scored higher than their general peers on most items, including those on hospital orderly, machinist, statistical clerk, and draftsman. Regression analysis was applied to the test scores, with statistical controls for scholastic aptitude, socioeconomic background, grade in school, size of community residence at age 14, and previous work experience. Results reveal that for whites (but not for blacks) the vocational students scored significantly lower than those in the general track on both the composit KWW index as well as on the part-score for college items.** For the noncollege items there was no difference between general and vocational students in any of the results.

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*The interviewer asked: "I'd like your opinion about the kind of work that women in certain jobs usually do. For each occupation on this card (hand card to respondent) there are three descriptions of job duties. Will you please tell me which description you think best fits each job? Be sure to read all of the possible answers before you decide." As an illustration, the response categories for department store buyers were
(1) "Selects the items to be sold in a section of a department store";
(2) "Checks on the courtesy of sales people by shopping at the store";
(3) "Buys department stores that are about to go out of business"; and
(4) "Don't know."

**The difference in scores among white males on the composite was statistically significant at the .10 level, and on the college part-score at the .01 level.

136

TABLE 14

Percentage of Respondents Correctly Identifying Occupational Duties in Knowledge of the World of Work Test, by Curriculum, Sex, and Race; Enrollment in Grades 10 to 12 in Relevant Year

Category	All curricula (Avg.)	Curriculum			
		Vocational	Comm. (or bus. and off.)	General	College prep.
			Men (1966)		
Fork lift operator	70%	69%	65%	69%	71%
Acetylene welder	92	88	88	93	92
Hospital orderly	70	67	66	68	74
Machinist	64	70	69	59	66
Stationary engineer	13	16	18	14	10
Statistical clerk	81	61	84	76	90
Draftsman	94	94	94	93	96
Economist	76	57	72	72	85
Medical illustrator	54	38	51	50	60
Social worker	93	86	94	91	97
			Women (1968)		
Assembler	74%	50%	74%	67%	83%
Key punch operator	68	58	78	65	70
Bank teller	80	68	84	73	89
Department store buyer	73	83	77	65	82
Dietician	80	54	80	75	87
Statistical clerk	44	27	42	40	50
Nurse's aide	92	100	94	90	95
Social worker	93	71	94	90	97
Medical illustrator	52	33	55	48	60
Quality control girl in a bakery	57	43	55	55	61

In contrast with the results for young men, for a young woman to be in an occupational curriculum is *positively* related to KWW, controlling for mental ability and the other variables. Comparing business and office versus general program students, the percentage of correct responses is higher for the former than for the latter in nine out of ten occupations. On the other hand, in only two instances is the proportion higher for "other vocational" than general. As in the case of young men, proportionately more college preparatory students were better able to identify the occupational duties of nearly every occupation on the list.

Judgements regarding the appropriateness of curriculum to occupational goals are difficult, because assumptions are needed as to the *level* and *types* of education and training implied by occupations. Using counseling and guidance materials published by the U.S. Bureau of Labor Statistics, Grasso and Shea assigned each three-digit census occupation to one of these categories: (1) occupations typically call for four or more years of college; (2) occupations not typically requiring a baccalaureate but for which other preemployment training is often available;* and (3) a residual category dubbed "no special requirements," in the sense that preemployment training or multiemployer apprenticeship is relatively uncommon. In the first category are jobs such as professor, teacher, physician, and engineer. The second includes actor, nurse, technician, a variety of clerical, sales, managerial, and skilled manual work, and some service jobs (e.g., hairdresser). The last embraces a number of occupations requiring little specialized preparation (e.g., file clerk), as well as a number of occupations by and large restricted to a single industry sector where training is often in-house (e.g., postal clerk, locomotive fireman).

To illustrate with data from the 1970 Census, *all* employed persons are cross-classified by major occupation group and the measure of "preemployment preparation opportunities." A large proportion of those in professional and managerial categories are in jobs for which a college education is often required or preferred. Overall, however, only about one-fifth of all jobs imply four or more years of college; two-fifths are such that other training off the job is available; and the remaining two-fifths or so can be entered without specific occupational skills peculiar to the job (see Table 15).

The training requirements and opportunities associated with the occupational goals of students in the NLS are also presented (see Table 16), and several observations are worth making. First, the occupational goals of blacks (especially the males) call for levels of education and training that are higher than the U.S. average, but are still lower than one

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*Such training may be provided in secondary schools (e.g., practical nurse); in various community college, preparatory school, or other settings (e.g., apprenticeship); or in both.

TABLE 15

Employment in Major Occupation Groups and by Sex, According to Level and Type of Preemployment Occupational Preparation Offered, 1970

(N in thousands)

Major occupation group, sex	N	Percent employed in occupations for which...[a]		
		a baccalaureate degree + is normally required	some other preemployment preparation is available	no preemployment training is necessary
Total, all occupations, both sexes	76,931	19%	42%	38%
Professional, technical	11,699	77	22	b
Managers (nonfarm)	6,315	88	8	4
Sales	5,432	3	93	4
Clerical	13,994	--	47	53
Craftworkers	10,594	--	54	46
Operatives	13,493	--	55	45
Private household	1,168	--	--	100
Other services	8,447	--	40	60
Farm laborers, foremen	962	--	--	100
Farmers, farm managers	1,426	--	100	--
Laborers (nonfarm)	3,431	--	--	100
Men, all occupations	47,915	22	39	39
Women, all occupations	29,016	15	48	38

SOURCE: Derived from U.S. Bureau of the Census (1973).

[a] Detail may not add to total because of rounding.

[b] Less than .5 percent.

TABLE 16

Preemployment Educational Requirements and Opportunities for Occupation Desired at Age 30 (Age 35 for Women), by Curriculum and Race; Enrollment in Grades 10-12, Base Year

		Percent[b]		
	N[a] (thousands)	Occupation requires college 4+	Other preemployment training available	No special requirements
			Men (1966)	
Whites:				
Vocational	404	25%	63%	12%
Commercial	79	c	c	c
General	1,421	39	49	13
College prepatory	1,528	77	16	7
Total (or avg.)	3,540	54	36	11
Blacks:				
Vocational	74	25	54	21
Commercial	20	c	c	c
General	239	39	40	21
College prepatory	127	56	28	16
Total (or avg.)	473	41	41	18
			Women (1968)	
Whites:				
Vocational	96	c	c	c
Bus. and office	751	6%	74%	20%
General	1,663	26	56	18
College prepatory	1,830	58	35	7
Total (or avg.)	4,364	36	51	14
Blacks:				
Vocational	22	c	c	c
Bus. and office	100	20	55	25
General	312	22	61	17
College prepatory	149	60	39	1
Total (or avg.)	584	32	54	15

---

[a] Excludes those who said "don't know," who plan not to work, and those for whom a goal was not ascertained.

[b] Detail may not add to 100 percent because of rounding.

[c] Percent not shown; base less than 25 sample cases.

might have assumed on the basis of their relatively high educational aspirations. Second, the occupational goals of black males in occupational programs are no higher than of white males, although this was not the case in terms of educational aspirations: the blacks held considerably higher educational goals. Third, many students in college preparatory programs often aspire to occupations requiring less than four years of college. Perhaps they are more cautious or less certain of their ability to go to college. Finally, as expected, students in occupational programs more often than their peers aspire to occupations associated with some preemployment training below the baccalaureate, yet sizable fractions (especially of black youth) have occupational goals implying either completion of college (black males and females) or no special preemployment training (women and black males). Although it is difficult to derive an exact quantification of the lack of consistency among educational and occupational goals and curriculum, the data appear to show a substantial degree of inconsistency.

Curriculum Change

Before turning to any discussion of outcomes, it is important to note that curriculum is not fixed during the high school years. Curriculum change is observed for many reasons. In some cases, change of curriculum may be registered as students leave the general track to enter vocational programs at various times, with some programs beginning in the ninth grade and others in the later high school years; however, none of the data from the national surveys seems to include information on when the students could have elected to enter vocational programs. Other cases of change occur as students elect to change programs, or are reassigned by the school.

Data from the national surveys are confusing on the volume of change. In personal communications, Rupert N. Evans, of the University of Illinois at Urbana-Champaign, provided the following figures from Project Talent on vocational seniors: about 42 percent had been associated with the same curriculum in the ninth grade; about 21 percent were with the general track; and the remaining 37 percent were distributed among college preparatory, commercial, agriculture, and other. (However, recall that in Talent data the program in the ninth grade was based on a question about the current or expected program of study.)

From Youth in Transition, Bachman noted:

> There was, of course, a good deal of movement among programs from sophomore to senior years....Over three quarters of those in vocational programs at the end of their senior year had "transferred in" from other programs (mostly from the general programs). A similar pattern occurred among those in business programs. On the other hand, more than two-thirds of the seniors in the college preparatory programs had been in those programs consistently throughout high school (1972, p. 26).

On the other hand, Grasso and Shea note rather little movement from the NLS. Between the base year survey and one year later, fewer than 10 in 100 students moved. The most mobile were black males in a college preparatory program: 10 percent shifted to an occupational curriculum and 7 percent moved to the general track. (It may be noted that no black male in the NLS sample entered a college preparatory program between the two survey dates.) The gross movement within all sex-race categories resulted in a net gain to occupational curricula (see Table 17).

Curriculum change in the NLS seems to be congruent, in general, with the aspirations, likes, and dislikes of those who switched. Youngsters who shifted to an occupational curriculum had held lower base-year educational aspirations than those who stayed in a general or college preparatory program. Even so, the "movers" had possessed somewhat higher base-year goals than those in an occupational area two years in a row (see Table 18).

Men who shifted to a vocational or commercial program more often raised than lowered their aspirations: 22 versus 17 percent. On the other hand, among the "stayers," a definite sorting-out-process is evident. College preparatory men--85 percent of whom aspired to at least four years of college--were more likely to raise than lower their already high aspirations as a group. Just the opposite was true of men who stayed in occupational programs. On the other hand, among the young women, "movers" to an occupational curriculum were more likely to lower than raise their educational goals, and only among "stayers" in the occupational area did more girls raise than lower their goals.

Among both men and women, those who shifted to an occupational curriculum had been less likely than stayers--with the exception of boys who remained in a general program--to say they liked school "very much" at the base-year interview. Associated with the change in curriculum was a greater-than-average likelihood of reporting a change in attitude toward school, and most of the difference occurred because a large proportion of the "movers"--57 percent of the men and 44 percent of the women--said they liked school more.

The possibilities for curriculum change during high school require some caution in interpreting findings on the effects of curriculum that are based solely upon the last reported curriculum. For example, if the general program does not serve a certain student well and the student transfers belatedly to a vocational program, then a follow-up of this "vocational graduate" may not only conceal the shortcomings of the general program, but also fail to reflect the reputed benefits of participation in a complete vocational program. Similar pitfalls lie in the cases of students changing from college preparatory to the general program, of students changing from one vocational specialty to another, etc.

As shown below, curriculum change poses an important problem for studies on the "holding power" of curriculum. The data show net movement

142

TABLE 17

Comparison of High School Curriculum by Sex and Race; Enrollment in Grades 9-11 in the Base Year and in Grades 9-12 at the First Reinterview

Curriculum Base Year	Number (thousands)	Number Percent	Curriculum, 1st reinterview (%)[a] Voc.	Com. or (B & O)	Gen.	Coll. prep.
			Men (1966-67)			
Whites:						
Vocational	299	(8)	98%	0%	2%	0%
Commercial	97	(3)	b	b	b	b
General	1,603	(46)	2	2	94	1
College prep.	1,519	(43)	1	1	2	96
Total (avg.)	3,519[c]	(100)	(10)	(4)	(44)	(42)
Blacks:						
Vocational	55	(11)	92	2	6	0
Commercial	21	(4)	b	b	b	b
General	307	(63)	3	4	93	0
College prep.	108	(22)	8	2	7	84
Total (avg.)	491[c]	(100)	(14)	(7)	(60)	(19)
			Women (1968-69)			
Whites:						
Vocational	61	(1)	b	b	b	b
Bus. and office	596	(14)	0	98	1	1
General	1,920	(46)	1	6	92	1
College prep.	1,604	(38)	1	4	0	95
Total (avg.)	4,181[c]	(100)	(2)	(18)	(43)	(37)
Blacks:						
Vocational	24	(5)	b	b	b	b
Bus. and office	70	(13)	0	93	3	4
General	314	(60)	0	1	98	0
College prep.	112	(22)	0	3	1	96
Total (avg.)	520[c]	(100)	(5)	(14)	(60)	(22)

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[a] Detail may not add to 100 percent because of rounding.
[b] Percent not shown; base less than 25 sample cases.
[c] Excludes those for whom curriculum in either year was not ascertained.

TABLE 18

Comparison of Educational Aspirations and of Attitude Toward School, by Sex: Men (1966-67) and Women (1968-69) Enrolled in Grades 9-12 in Base Year and at First Reinterview

(N in thousands)[a]

Category	Total or avg.[b]	Changed to occupational curriculum	Same curriculum, both years: Occupational	Same curriculum, both years: General	Same curriculum, both years: College prep.
Men (N)	4,273	128	454	1,838	1,567
Coll. 4+, 66	60%	44%	28%	49%	85%
Coll. 2, 66	16	16	32	18	9
H.S. 12 or less, 66	24	40	41	33	6
Higher in 1967	11	22	8	12	9
Lower in 1967	10	17	19	13	3
Liked school "very much," 66	40	30	39	20	44
Liked school more, 67	37	57	35	35	38
Liked school less, 67	7	4	8	7	7
Women (N)	4,949	239	642[c]	2,070	1,619
Coll. 4+, 68		24%	11%	40%	81%
Coll. 2, 68		20	36	23	14
H.S. 12 or less, 68		57	53	37	6
Higher in 1967		12	16	11	13
Lower in 1969		20	12	16	19
Liked school "very much," 68		45	50	52	61
Liked school more, 69		44	31	36	36
Liked school less, 69		15	10	13	18

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[a] Detail may not add to 100 percent because of rounding.

[b] Includes those who made other changes, not shown separately.

[c] Business and office only; excludes other vocational.

from the general track to vocational programs during the high school years, much of which may be the natural articulation of students at varying starting points for the vocational programs. This fact of movement may impart a bias to follow-up data favoring the vocational program with respect to high school dropout rates, because movement per se results in a positive correlation between enrollment in a vocational program and the highest year of high school completed. With this in mind, we can now review results on the effects of curriculum on achievement and attainment.

Basic Skills

Clearly, achievement in basic skills should be an important educational outcome of any high school program. Skills such as language comprehension, vocabulary and spelling, writing ability, and arithmetic are important for vocational as well as other purposes. An automobile mechanic needs to reason verbally, to diagnose difficulties based upon understanding why things work, to read and comprehend technical manuals, and so forth. Vocational programs may fail to realize their potential if they do not purposefully develop all of the competencies for career establishment and advancement. In fact, basic skills may be especially important for vocational students with lower-than-average achievement upon entry.

Underdevelopment in basic skills is a national problem. The Health Examination Surveys of 1966-70 of the National Center for Health Statistics reveal that of youth 12 to 17 years of age, 6.7 percent of males and 2.8 percent of females cannot read at the fourth-grade level. Among blacks, the rates are 20.5 and 9.6 percent for males and females, respectively.

Research on student achievement suggests that the nature and extensiveness of the curriculum are important for explaining variation in test scores. Various studies point to the following factors that affect scores: total time in school, time on academic activities, ways of spending academic time, and the amount of content covered (Rosenshine, 1976). Wiley and Harnischfeger (1977) relate declining time spent on academic subjects to declining scores on standardized tests. They point out that, according to the National Center for Education Statistics, students are taking fewer courses in traditional history, foreign languages, algebra and geometry, chemistry and physics, than before. Fine (1966) points out that a considerable number of underachieving schools exist in the United States, where the bulk of class time is devoted to administrative and disciplinary activities. He cites a study of one California school where teachers had reported that two-thirds of their time went for these purposes, and only 15 percent was devoted to instruction.

Vocational programs are implicated with respect to academic skills because of their curricular emphases. Statements from two studies based on Project Talent are noteworthy in this regard:

> At the present time many poor students who are just barely able to read are placed in vocational training courses that give

> very little emphasis to reading and basic skills. It is probable that a large proportion of these students do not end up with skills that make them attractive to employers; consequently such people will be handicapped occupationally because of their low literacy and low basic skill level. It is possible that placing such students in a general curriculum and raising their basic literacy slightly might do more to maximize their employability than putting them in a specific very narrow, very low level occupational training program (Flanagan et al., 1962, p. 4-22).

> The preliminary finding that reading comprehension improves in high school somewhat more for students taking a lot of academic courses than for students taking less of this kind of classwork suggests that it would be worthwhile to focus attention on research concerning the academic-versus-vocational-education issue....It would be well to find out, through research designed especially for the purpose, whether the boy or girl taking a vocational program in high school will as an indirect and unsought consequence have less reading competence in adult life than he otherwise would (Shaycoft, 1976, p. 9-12).

Vocational programs may vary in the degree to which they seek to develop verbal and other competencies. Many vocational instructors, unfortunately, are probably less "verbal" than other high school teachers, just as most academic instructors are not very competent in vocational skill areas.

The ongoing study by Schmidt and Wiley using LSEE data, cited earlier, may illuminate this area of concern. They explore the relation between achievement (in mathematics, reading, and vocabulary) and the nature and extent of the high school program, statistically controlling for family socioeconomic level and scholastic aptitude. Schmidt reports "large effects" for time spent in academic subjects. Time spent in class is found to vary widely, and the amount of vocational coursework is found to be inversely related to family status and scholastic aptitude. Still, Echternacht (1975) also used LSEE data, reporting that vocational students were distinguished from general students in being less alienated from school, having less difficulty with school (higher percentile rank), and giving their schools high ratings for quality. Vocational students also ranked higher than general students in self-esteem, especially among blacks. Taken together, these sets of findings suggest that a kind of "trade-off" occurs in vocational education.

Other special work-study and cooperative programs are [illegible] implicated. Reviewing research on in-school and summer Neighborhood Youth Corps (NYC) programs in the early and mid-1960's, Perry and his associates note: "...since enrollees spent time working instead of at their studies, participation in NYC actually impaired grades of enrollees who had previously performed adequately in their studies (at least a C average prior to enrollment)" (1975, p. 94). Stromsdorfer (1973a) studied the outcomes of a high school cooperative education program in Dayton, Ohio. After devising a comparison group and examining both academic achievement and post-school experience in the labor market, he found positive (or neutral) effects of cooperative education on labor market outcomes. However, in comparison with the control group, students in the cooperative program experienced a steady deterioration in academic achievement from freshman to senior year.

In his review of several studies, Augsburger (1974) called attention to the fact that a number of investigators (Trueblood, 1957; Henry, 1967; and Budd, 1956) found no adverse effect of part-time employment on academic performance at the postsecondary level. At least one (Henry), however, reached a conservative conclusion regarding freshmen in need of financial aid--namely, that they need not sacrifice academic achievement if they are employed 15 hours per week or less. Two other pieces of research cited by Augsburger (Hay, 1969; Baker, 1941) revealed adverse effects on academic performance for students who worked over 15 hours per week on their jobs. These findings are not dissimilar to another review by Oscar Lenning and his associates at the American College Testing Program (1974). Based on published data in the 1960's, they concluded that "extracurricular activities (including work) do not seem to inhibit and may assist academic success if the activity is not concentrated to any great extent. Overconcentration on an out-of-class activity, however, can interfere with academic progress" (p. 12).

Cross (1973, p. 18) mentions studies at the college level which compared the academic performance among cooperative vocational and other students. The first (Gore, 1972) revealed that students in a college of business administration cooperative program had higher grades and scored higher on the Graduate Record Examination (GRE). A study by Wilson and Lyons (1961) revealed higher GRE advanced engineering test scores for co-op students. Yencso (1971) reported higher grades of co-op alumni compared with their nonco-op counterparts. Hay (1969) found higher academic performance among working students whose jobs were related to their major field of study than among those with unrelated work.

Of course, it is also argued that academic performance may be enhanced by vocational programs that give "new meaning" to the academic subjects. Career education programs are said to tap motivation in this manner. Although in the case of many career education programs it is too soon to see results, Bhaerman (1977) has analyzed findings from 38 studies, and concludes that career education programs are having either a positive impact on academic achievement or at least not a negative impact. Thus, if vocational programs possess career education (exploration) components, they may have mixed effects on achievement: positive through greater motivation and negative through reduced academic time.

Dropping Out

Evidence on the effects of high school curriculum on reducing dropout rates is difficult to interpret. In an early use of Project Talent data, Combs and Cooley (1968) report that high school *dropouts* were more likely to have been associated with the general track at the time of leaving high school than were high school *graduates* who did not enter college. However, this analysis did not control for the differences in ability and socioeconomic level that were reported in the same study. It was also shown that dropouts were more likely to have been associated with the general track at the time of leaving high school than at the ninth grade. However, this actually involved a comparison between the current or expected curriculum in the ninth grade and the actual curriculum upon leaving, and the inclusion of ninth-grade expectations makes it hard to interpret the findings. It seems that *Project Talent* data are not very useful for studying this question.

Research with *Youth in Transition* on the subject of dropping out has been extensive, but the effects concerning curriculum are, again, difficult to interpret. In Bachman's major study (Bachman et al., 1971), it was reported that college preparatory students were less likely than their peers to leave school early, and "the other programs of study, general, vocational, commercial, agricultural, etc., showed little variation in dropout rate" (p. 60). Actually, the report is not clear on whether this finding is based on multivariate results. However, in Bachman's report (1972) on the unpublished work of Johnston and Davidson, he states:

> Given that the vocational education students were relatively "dropout prone," the question arose: Does being in the vocational program increase or decrease the likelihood that a young man will drop out of high school? The results of our analyses clearly indicate that after adjusting statistically for differences in family background, ability, and past school performance, vocational students actually dropped out a bit less....Students in the general curriculum dropped out more... their *adjusted* dropout rate was about one-third higher than [the other groups] (p. 28).

Even so, Davidson has indicated in personal communications that curriculum change from one year to the next was not considered in their analysis. Nor was this done with Hill's (1975) work with the NLS, which reported that the vocational program improved the dropout rate among whites but not among blacks.

The important role of curriculum change is underscored in work by Grasso and Shea (forthcoming) with the NLS. First, a multiple regression relating high school completion to curriculum, aptitude, socioeconomic level, and type of community was performed on cross-sectional data for NLS youth out of school in 1973 (males) or 1972 (females) who had completed at least tenth grade (i.e., in order to minimize the possibility of associating effects to the general track by default). Results with such a model show positive programs (but only for whites) and for other vocational programs (only for white females). Among males of both races, the vocational program effect is positive but nonsignificant (see Table 19).

TABLE 19

High School Completion: Regression Results on Cross-Sectional Data for Males, 1973, and Females, 1972[a]

Explanatory variables and statistics	White males	Black males	White females	Black females
Scholastic aptitude	.004**	.005**	.002**	.0015
	(.0004)	(.002)	(.0005)	(.0012)
Socioeconomic origins	.02**	.03**	.02**	.03**
	(.003)	(.01)	(.003)	(.009)
Vocational[b]	.01	.07	.08*	.04
	(.02)	(.06)	(.045)	(.09)
Commercial (or business, office)[b]	.06**	-.07	.09**	.03
	(.03)	(.12)	(.02)	(.04)
College preparatory[b]	.03**	.13**	.10**	.11**
	(.01)	(.06)	(.02)	(.04)
Rural[c]	-.004	.03	.05**	.06
	(.02)	(.07)	(.02)	(.05)
Small town[c]	-.005	.06	.04**	.01
	(.01)	(.07)	(.01)	(.05)
Large city[c]	-.02	-.03	.02	-.05
	(.02)	(.06)	(.02)	(.04)
Constant	.32	.05	.40	.45
R^2	.10	.10	.09	.04
F	27.49**	5.35**	27.91**	3.94**
N	1,971	377	2,289	546
Mean (Y)[d]	.93	.78	.91	.85
SD (Y)	.25	.41	.28	.36

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[a] Restricted to those out of school who had completed 10 or more years of school. Standard errors in parentheses.

[b] Reference group: general curriculum.

[c] Reference group: respondents living in small city or suburb at age 14.

[d] Dependent variable is coded "1" for those completing at least 12 years of school, and is coded "0" for all others.

*Significant at .10 level (2-tailed t-test except for SA and SEO).

**Significant at .05 level.

Second, attention is restricted to those in grades 10 to 12 in base years, and rates of completion of that grade are estimated for each curriculum separately. "Low" and "high" estimates are computed with different assumptions about those not interviewed at the first follow-up (see Table 20).

These "longitudinal" estimates conclude that, in comparison with those students from a general program in the same sex-race groups, the dropout rate for vocational men is higher; for commercial men, lower; for business and office women, lower; for college preparatory men and white women, lower. (For black women, the data are inconclusive.) The basic conclusion from these data seems to be that, in contrast to a general curriculum, (1) occupational programs for men, on balance, are associated with early withdrawal from high school; and (2) business and office programs (at least for black women and perhaps for white) enhance retention in school.

Thus, longitudinal evidence disagrees with cross-sectional evidence even concerning the direction of curricular effects on retention in school of males. With regard to females, the evidence is mixed only with respect to the strength of the relationship. We attribute the discrepancy in findings among males to the fact that the net flow of students toward occupational programs during the high school years, in itself, produces a positive correlation between enrollment in a vocational program and the grade of high school attained, thus confounding estimates based on cross-sectional follow-up data. At the same time, the Grasso-Shea "longitudinal" analysis is less than ideal in that it does not control for family, background, and other preexisting differences. From all of this we conclude that the issue of retention effects remains an open question, and that the available national longitudinal data are not well suited for deriving an answer.

Postsecondary Schooling

Many studies show that transition from high school to college is strongly related to enrollment in the college preparatory high school program. In the NLS data for males who were twelfth-graders in 1966 and reinterviewed a year later, 56 percent of the whites and 32 percent of the blacks were enrolled in college. Among whites, the proportions by curriculum were 16, 27, and 87 percent for vocational and commercial, general, and college preparatory students, respectively. Among blacks, the comparable figures were 22, 14, and 71 percent.

Such dramatic differences between the college and other tracks may have had the consequence of diverting research attention from differences between the general and occupational curricula. In spite of a large amount of work carried out, the national surveys and other major studies do not investigate the full range of curriculum differences (e.g., Alexander and McDill, 1976; Hauser et al., 1976; Jencks and Brown, 1975; O'Malley et al., 1977).

TABLE 20

Estimated High School Dropout Rates by Curriculum, Sex, and Race; Enrollment in Grades 10-12 in the Base Years

(N in thousands)

Curriculum, base year	Whites			Blacks		
	N	Low estimate[a]	High estimate[b]	N	Low estimate[a]	High estimate[b]
			Men (1966-67)			
Vocational	429	10%	16%	89	12%	27%
Commercial	126	3	15	27	4	10
General	1,842	6	16	304	7	13
College prep.	1,906	1	5	136	1	5
Total (avg.)	4,439	4	11	574	6	13
			Women (1968-69)			
Vocational	96	c	c	22	c	c
Bus. and office	751	3	7	100	1	4
General	1,663	4	7	312	6	6
College prep.	1,830	1	4	149	3	9
Total (avg.)	4,364	2	6	584	4	6

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[a] Number reinterviewed who were not enrolled at first follow-up and had completed fewer than 12 years of schooling.

[b] Number reinterviewed who were not enrolled at first follow-up and had completed fewer than 12 years of schooling, plus number not reinterviewed at first follow-up.

[c] Percent not shown; base less than 25 sample cases.

Differences in educational goals between occupational and general students were discussed earlier. Among youth who do not enter college after high school graduation, NLS data also show small differences by curriculum in the stated reasons for not continuing schooling. The fact that only 13 percent of the occupational graduates cited "couldn't afford college," compared with 18 percent from college preparatory and general programs, suggests the importance of aspirations. Looking at all NLS males out of school with 10 to 15 years of education, the most striking difference is found between whites and blacks. Proportionately more of the latter cited "had to work" for ending their education: 31 compared with 16 percent of the whites.

Among NLS young women, pregnancy and marriage rank as significant reasons for ending (or, at least, interrupting) schooling. Grasso and Shea examine NLS data for young women out of school in 1968 with a measure of the coincidence of the birth of a first child and schooling termination. Over one-third of NLS female high school dropouts are accounted for by this measure (see Table 21). Interestingly, college preparatory high school dropouts are more likely to leave school for marriage and/or pregnancy than are those from other curricula, presumably because they are less likely to leave for other reasons. At each attainment level, the percentage of black women who bore a child within one year of leaving school is higher than for whites. These findings emphasize that pregnant teenagers and young mothers comprise a special category of those with special needs.

The point is that many pregnant girls are advised (or required) to stay away from school; poor options are offered (e.g., one hour of homebound instruction per week); and should a girl wish later to reenter school, she is often reassigned to a school with a limited evening program at some distance from home. Many of these young women have a very great need to acquire education or training which will allow them to support themselves and their children, but virtually no research with the national surveys has addressed their special case.

In an attempt to ascertain whether curriculum (for one reason or another) influences educational attainment, and at what stage that influence is felt, Grasso and Shea regress, in turn, three attainment variables on a common set of independent variables: scholastic aptitude (SA), socioeconomic origin (SEO), and a set of dummy variables for both area of residence at age 14 and most recent high school curriculum. The residence variables are (1) A14R, lived on a farm or ranch or elsewhere in the country (2) A14T, lived in a town or small city of under 25,000 population; and (3) A14CTY, lived in a large city of 100,000 or more. (The reference group is A14S, having lived in a suburb of a large city or in a city of 25,000 to 100,000 population.) Curriculum is also represented by a set of dummy variables: (1) VOC, vocational; (2) COM, commercial; and (3) CP, college preparatory. (The reference category is GEN, or general.)

TABLE 21

Percentage of Women Not Enrolled in School, Base Year, Who Bore a Child Within One Year of Leaving School, 1968

Curriculum	Highest Year Completed		
	10 & 11	12	13 to 15
Whites (avg.)	35%	11%	16%
Vocational	a	a	a
Business and office	34	8	a
General	32	11	18
College preparatory	47	14	17
Blacks (avg.)	44%	28%	22%
Vocational	a	32	a
Bus. and office	31	23	a
General	41	29	28
College preparatory	a	29	21

[a] Percent not shown: base less than 25 sample cases.

The dependent variables include two dichotomous measures: (1) 13+, whether a person completed 13 or more years of regular schooling; and (2) 13+/TNG, whether the respondent completed 13 or more years or had some post-school training. The third dependent variable is HSC, highest year of school completed, measured in continuous form. Because the sample is restricted to respondents who had at least 10 years of education, it ranges from 10 to 20.

The regression results are presented for men (1973) and women (1972) separately (see Table 22a, b). Three variables dominate the results; SA, SEO, and whether enrolled in a college preparatory program in high school. Each positively influences attainment.

In the results on the transition to college, the coefficients for VOC are negative, significant, and relatively large for both white and black males: -.10 in both instances. In other words, taking account of SA, SEO, and area of residence at age 14, having been in a vocational program reduces the probability of completing one or more years of college by at least 10 percentage points. "At least" is used because the sample is restricted to those not in school in 1973; if general students going to college attend a greater number of years than vocational, differences based on later collections of NLS data will be greater than those reviewed here.

The effect of curriculum on attainment of the young men--again understated, in all likelihood--is shown in results with HSC (highest year completed). The coefficients for occupational curricula are uniformly negative, although only one (VOC for white youth) is statistically significant. For them having taken a vocational program, other things being the same, reduces the highest year completed by about half a year (-.52) vis-a-vis the general program. The coefficient for black youngsters (-.26) is only half as large and barely exceeds its standard error.

With the young women, SA, SEO, and CP are again positive and in nearly every case statistically significant. Concerning completion of one or more years of college, three of the four occupational coefficients are negative and significant: -.12 and -.14 for B & O (business and office) among whites and blacks, respectively, and -.19 for VOC among young black women. The net influence on highest year of school completed is negative except for whites from a vocational program, but none of the occupational curriculum coefficients is significant.

These results suggest that occupational programs may have an independent, net negative impact on attainment of formal schooling, but two other factors should be kept in mind. First, a reduction in educational attainment should not necessarily be condemned. Indeed, it is possible to argue that this should be applauded. Second, results from use of the dependent variable 13+/TNG (i.e., some college or post-school training) should not be overlooked. In comparison with the earlier results,

TABLE 22a

Educational Attainment and Post-School Training: Regression Results for Men, 1973[a]

Explanatory variables and statistics	Whites			Blacks		
	Y= 13+	Y= 13+/ TNG	Y= HSC	Y= 13+	Y= 13+/ TNG	Y= HSC
SA	.01**	.004**	.05**	.01**	.01**	.03**
	(.001)	(.001)	(.004)	(.002)	(.002)	(.006)
SEO	.07**	.04**	.32**	.05**	.05**	.36**
	(.01)	(.006)	(.03)	(.01)	(.02)	(.05)
VOC_{73}[b]	-.10**	-.03	-.52**	-.10**	-.04	-.26
	(.03)	(.03)	(.16)	(.06)	(.08)	(.24)
COM_{73}[b]	-.05	-.03	-.25	-.01	.02	-.08
	(.05)	(.05)	(.26)	(.11)	(.15)	(.45)
CP_{73}[b]	.28**	.10**	1.44**	.21**	.03	1.04**
	(.02)	(.02)	(.12)	(.06)	(.08)	(.25)
A14R[c]	-.01	-.06**	-.11	.03	-.02	.48**
	(.03)	(.03)	(.14)	(.07)	(.09)	(.27)
A14T[c]	.03	-.04	.07	.02	.01	.35
	(.03)	(.03)	(.13)	(.07)	(.09)	(.28)
A14CTY[c]	.03	-.03	.17	-.07	-.01	-.45*
	(.03)	(.03)	(.14)	(.06)	(.08)	(.26)
Constant	-1.30	-.14	4.36	-.88	-.39	6.52
R^2	.39	.13	.40	.25	.10	.35
F	135.97**	33.17**	144.75**	13.67**	4.95**	21.09**
N	1,719	1,719	1,719	329	329	329
Mean (Y)[d]	.49	.78	13.7	.25	.55	12.4
SD (Y)	.50	.41	2.5	.43	.50	1.8

[a] Restricted to those out of school who had completed 10 or more years of school. Standard errors in parentheses.

[b] Reference group: *general* curriculum.

[c] Reference group: respondents living in small city or suburb at age 14.

[d] Dependent variables are defined in the text.

* Significant at .10 level (2-tailed t-test except for SA and SEO).

** Significant at .05 level.

TABLE 22b

Educational Attainment and Post-School Training: Regression Results for Women, 1972[a]

Explanatory variables and statistics	Whites			Blacks		
	Y= 13+	Y= 13+/ TNG	Y= HSC	Y= 13+	Y= 13+/ TNG	Y= HSC
SA	.006**	.004**	.03**	.007**	.003	.02**
	(.001)	(.001)	(.00)	(.001)	(.002)	(.00)
SEO	.06**	.04**	.21**	.06**	.05**	.17**
	(.005)	(.006)	(.02)	(.01)	(.01)	(.03)
VOC_{72}[b]	.03	.03	.30	-.19**	-.008	-.30
	(.06)	(.08)	(.26)	(.09)	(.12)	(.30)
$\mathrm{B\&O}_{72}$[b]	-.12**	.02	-.09	-.14**	.02	-.24
	(.02)	(.03)	(.08)	(.04)	(.06)	(.15)
CP_{72}[b]	.33**	.24**	1.27**	.26**	.18**	.85**
	(.02)	(.03)	(.09)	(.05)	(.06)	(.17)
A14R[c]	.08**	-.02	.35**	.09*	-.14**	.32*
	(.02)	(.03)	(.10)	(.05)	(.06)	(.17)
A14T[c]	.04*	-.05*	-.15*	-.02	-.12*	-.11
	(.02)	(.03)	(.09)	(.05)	(.07)	(.18)
A14CTY[c]	.06**	.04	.25**	-.05	-.06	-.32**
	(.02)	(.03)	(.10)	(.05)	(.06)	(.16)
Constant	-1.11	-.21	7.17	-.92	-.03	9.24
R^2	.41	.16	.36	.29	.10	.20
F	200.48**	45.51**	134.75**	29.47**	6.91**	15.23**
N	2,289	1,927	1,927	546	447	447
Mean (Y)[d]	.40	.67	12.77	.30	.60	12.26
SD (Y)	.49	.47	1.76	.46	.49	1.35

[a] Restricted to those out of school who had completed 10 or more years of school. Standard errors in parentheses.

[b] Reference group: general curriculum.

[c] Reference group: respondents living in small city or suburb at age 14.

[d] Dependent variables are defined in the text.

* Significant at .10 level (2-tailed t-test except for SA and SEO).

** Significant at .05 level.

the occupational coefficients here are smaller in size and are in no case statistically significant. In these results the effects of SA, SEO and CP are also less strong, suggesting that opportunities afforded by noncollegiate forms of postsecondary training lessen the otherwise inhibiting effects of low SA, low SEO, and nonacademic studies on attainment. The coefficients of determination (R^2) are also noticeably smaller, and the mean values for the dependent variables also point to this conclusion. For example, 49 percent of the out-of-school white men completed 13 or more years of schooling, but only 25 percent of the black. The comparable mean values for completion of college *or* some post-school training are 78 and 55 percent--about the same *absolute* gap but a smaller *relative* one. All of these results suggest that, first, postsecondary activities other than formal schooling constitute avenues for attainment that do not rely so heavily on origins and scholastic aptitude, and that, second, accounting for these forms of attainment leads to results showing no disadvantage among occupational program graduates.

Grasso and Shea also performed a parallel analysis restricting attention to those in the lowest third of the distribution of scholastic aptitude. Interestingly, results with this subset show that commercial programs for white males and business and office programs for white females influence educational attainment in a positive way. These results suggest that some occupational programs may add more to (or subtract less from) the educational attainment of the lowest SA third than for students of higher ability levels.

Of course, none of the results reviewed immediately above includes an explicit formulation of the role of educational aspirations. Since aspirations vary by curriculum, the measured effects of curriculum may merely reflect underlying differences in aspirations. Unfortunately, the solution to this problem is not clear because educational aspirations are not necessarily "causally prior" to choice of curriculum.

Using *Project Talent* data, Jencks designed path models to estimate the effects of the college preparatory curriculum on college chances for males and females combined. Using the hypothesis that aspirations are "causally prior" to choice of curriculum produced a 25 percent reduction in the measured effect of curriculum (Jencks et al. 1972, p. 168, fn. 35). Using the NLS data for males only, and *excluding* young men in the college track, Grasso and Shea formulated two versions of an educational attainment path analysis. In the first, aspirations are treated as by Jencks; this is the "goal-directed" model. In the second, choice of an occupational curriculum (versus the general curriculum) is thought to influence aspirations; this is the curriculum "tracking" model, and is consistent with the one used by Creech et al. with the high school seniors in the LSEE (1977, p. 3.59). The data used by Grasso and Shea pertained to those who were in high school at the first NLS survey (when aspirations and curriculum were measured) and who were out of school at the 1973 follow-up. A few results are worth recounting. (1) the negative effects of an occupational program on attainment are virtually the same whether controlling for aspirations or not; stated differently, of the total positive effects of aspirations on attainment, only 3 percent are indirect via the positive effect of the general curriculum. (2) The importance of curriculum for aspirations is confirmed for the "tracking" model. Choice of an occupational program reduces attainment, with 70 percent a direct effect and 30 percent an indirect effect through reduced aspirations. This seems to suggest the superiority of the "tracking" model over the "goal-directed" model so far as the effects of occupational-versus-general curricula are concerned. (3) Reapplying the model to black youth alone produces additional points of interest. (a) There is no evidence of indirect effects of curriculum and aspirations in either version; these two factors operate independently. (b) Growing up in a rural area has significant negative indirect effects on attainment, because rural origin is associated with lower measured ability (SA) and lower aspirations. The relationship with measured ability did not appear in the results for all young men or for whites only. (c) Unlike the results for all young men or for whites, ability for blacks is positively associated with occupational programs, and there is a negative indirect effect of ability on attainment through this association. Grasso and Shea speculate that, among black youths not enrolling in college preparatory programs, those who manifest somewhat greater scholastic aptitude are encouraged to enroll in occupational programs. The effect of doing so is to reduce ultimately their highest year of school completed.

Although these results are intriguing, they are only suggestive and require replication and elaboration. It is not clear, for instance, whether any effects of curriculum on basic skills play an important role in the attainment process. LSEE data show that "of those who had made formal application to some postsecondary institution, 66% were accepted and attended their first-choice school. This rate was about 61% for male vocational graduates and about 57% for female vocational graduates" (Creech et al., 1977, p. 5.6). The lower rates for vocational students may be related to basic skills--or even to the ability to properly complete the forms for application to admission--but this is speculation.

Findings from the LSEE also show that vocational students are not particularly successful in realizing postsecondary education or training plans (see Table 23). Of those planning to continue formal schooling or to enter apprenticeships after graduation, vocational students are a little less likely to have realized their plans than are those from general programs.

Post-School Training

Paying explicit attention to the relationship between curriculum and the nature and extent of post-school training not only is valuable in its own right, but needs to be done in order to interpret curriculum effects on post-school labor market outcomes. As indicated earlier in findings from research with NLS data, while the vocational program may

158

TABLE 23

Realization of Post-High School Plans by High School Curriculum: LSEE[a] data from October 1972 Follow-up

Activity	Curriculum		
	Academic	General	Vocational
Trade or vocational school	59%	44%	44%
Two-year academic	64	60	46
Two-year technical school	49	42	44
Four-year college	80	57	53
Apprenticeship	30	34	19
Military service	43	46	31

SOURCE: derived from Creech et al., 197[illegible] pp. 4.8-4.9.

[a] Percent of those who planned as seniors to enter the post-high school activity, who had actually entered by the first-follow-up survey.

have a net negative impact on the amount of formal schooling completed, opportunities for post-school training may serve as attractive alternatives, or substitutes for academic studies.

Again, extensive work based on the NLS is worthy of review. In the base year survey for men, those out of school were asked a series of questions about the education or training they had received outside of regular school.* Besides source, the interviewer askied about length of training (months); intensity (hours of week); whether the course or program was completed and, if not, the reason; and whether the education or training was used on present (or last) job.

About two-thirds of the men out of school in 1971 who had completed 10 to 15 years of schooling reported having received some post-school training (see Table 24). About half of the out-of-school women in 1972 reported some training. Among men and women, both blacks and whites, high school graduates reported more training than high school dropouts.

With respect to high school curriculum and the likelihood of receiving any post-school training, results are inconclusive for males. Data from 1966 show that a greater proportion of general high school graduates had received training than did the proportions of either commercial or other vocational graduates. Data from 1969, however, show that the reverse is true; and 1971 data show virtually no difference. However, the results do indicate differences by type and by source. Specifically, of men receiving training, occupational graduates are more likely than their peers to receive "skilled manual" types of training and to receive "company training." Commercial graduates are more likely than their peers to receive "managerial" training. College preparatory graduates are more likely than their peers to receive training from a business college or technical institute.

The NLS data for men also show striking intercolor differences in 1966, but the relative gap was closing through 1971. Black men with 12

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*The sources measured in the first survey were "business college or technical institutes such as drafting, electronics training"; "a full-time program lasting six weeks or more at a company training school"; "apprenticeship training or any other vocational or technical training (NOT counting on-the-job training given informally)"; "additional general courses in a regular school, such as English, math or science"; and (for military veterans), training other than basic training. The next-to-last question was prefaced: "Since you stopped going to school full time..." A common lead-in was used for the first three sources: "Aside from regular school..." The 1968 questions asked of women were less precise as to source, such that postsecondary proprietary training cannot be distinguished from public or government-sponsored special training programs.

TABLE 24

Percentage of Respondents Reporting Post-School Training, High School Curriculum (Most Recent), Sex, and Race: Men (1971) and Women (1972) Not Enrolled in School

(N in thousands)

Highest Year of school completed	Whites N	Whites Percent with some training	Blacks N	Blacks Percent with some training
		Men		
10 to 11, total (avg.)	852	58%	228	37%
12, total (avg.)	2,514	68	324	59
Vocational	401	65	54	51
Commercial	136	67	9	b
General	1,487	66	227	56
College prep.	489	78	34	71
13 to 15, total (avg.)	596	67	45	78
10 to 15, total (avg.)	4,040	67	621	51
		Women		
10 to 11, total (avg.)	2,303	33%	661	38%
12, total (avg.)	6,501	52	771	51
Vocational	129	42	39	46
Bus. and office	2,061	54	160	60
General	2,844	46	454	46
College prep.	1,354	64	112	66
13 to 15, total (avg.)	1,643	51	141	66
10 to 15, total (avg.)	10,447	48	1,573	47

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[a] Data pertain to men 19 to 29 years old and to women 18 to 29 years old.
[b] Percent not reported; base less than 25 sample cases.

to 15 years of education made especially rapid gains in terms of post-school training. Indeed, among men with 13 to 15 years of schooling, by 1971 the percentage of blacks reporting some post-school training (exclusive of military) exceeded that for whites (78 percent versus 67; see Table 25). Moreover, by 1971, average duration of training favored blacks. In 1966, median hours of training (excluding military) for blacks with some training was only 71 percent of the figure for whites; by 1971, this figure had changed to 107. Exclusive of military training, in the latter year median hours for blacks with 10 to 15 years of schooling was 392; for whites, 365. Almost surely, much of the improvement reflects (1) economic expansion between 1966 and 1971 and (2) manpower training efforts of both the public and private sectors.

As was true of the young men, young women received training after high school from such sources as business and technical schools, adult education, and company-sponsored training programs. Nearly half of both white and black women (i.e., 48 and 47 percent, respectively) with 10 to 15 years of school had done so by 1972.

Participation in post-school training varied with their level of formal schooling. Among whites, for example, only 33 percent of high school dropouts had some training, while over 50 percent of high school graduates did, and the same pattern obtains for blacks (see Table 26). Furthermore, the type of training received varied by level of schooling. Among women of either race, those who had gone to college tended to gain training outside college of a "professional or technical" nature, while those with high school diplomas tended to gain clerical or secretarial types of training.

Among the high school graduates who did not go to college, several differences are related to curriculum. Women from college preparatory programs were more likely than their classmates to receive some training and, among white at least, were more likely to receive "professional or technical" or "clerical" training. Women from business and office high school programs tended to get clerical or secretarial training, presumably to supplement the skills gained in school. Among women from the general curriculum, there were no extraordinary differences in the amount or type of training received.

It is also interesting to examine results for the general and college preparatory high school graduates according to whether they had received any typing or shorthand in high school. Surprisingly, the receipt of typing courses during high school seems to be related to a greater likelihood of receiving additional training. In fact, the proportions receiving post-school clerical or secretarial training are invariably higher for those with typing or shorthand during high school than for those without: for white college preparatory women the figures are 33 versus 21 percent; for white general curriculum graduates they are 24 and 15; and the analogous figures for blacks are 56 versus 18 and 22 versus 17 percent. Thus, as was the case with the young men, information on amounts and types of post-school training received by young women suggests that training after high school may supplement the program of study taken in school.

162

TABLE 25

Percentage of Respondents Reporting Training Outside Regular School (Excluding Military) High School Curriculum and Race; Men Not Enrolled in the Base Year

(N in thousands)

Highest Year of school completed, 1966	Whites			Blacks		
		Percent with some training			Percent with some training	
	N	1966	1971	N	1966	1971
10-11, total (avg.)	852	27%	58%	228	20%	37%
12, total (avg.)	2,514	40	68	324	21	59
Vocational	401	36	65	54	23	51
Commercial	136	30	67	9	a	a
General	1,487	40	66	227	21	56
College prep.	489	47	78	34	18	71
13-15, total (avg.)	596	42	67	45	39	78
10-15, total (avg.)	4,040	38	67	621	22	51

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[a] Not calculated; base less than 25 sample cases.

TABLE 26

Percentage of Respondents Reporting Training Outside Regular School, High School Curriculum (Most Recent), and Race; Women Not Enrolled, 1972

(N in thousands)

		Percent reporting				
		Some training (unduplicated count)	Type			
Highest year completed and curriculum	N		Prof. tech. mgr.	Clerical	Skilled manual	Other
		Whites				
10-11, total (avg.)	2,303	33%	5%	10%	6%	20%
12, total (avg.)	6,501	52	16	26	7	18
Vocational	129	42	11	14	3	25
Bus. and office	2,061	54	14	31	5	19
General	2,844	46	12	22	8	16
w/typing, shorthand	2,071	49	12	24	8	19
w/o typing, shorthand	768	36	12	15	6	8
College prep.	1,354	64	27	30	10	20
w/typing, shorthand	913	70	28	33	12	26
w/o typing, shorthand	441	52	27	21	8	8
13-15, total (avg.)	1,643	51	31	18	4	17
		Blacks				
10-11, total (avg.)	661	38%	8%	9%	5%	27%
12, total (avg.)	771	51	15	25	9	18
Vocational	39	46	9	17	3	27
Bus. and office	160	60	21	29	9	22
General	454	46	14	20	9	15
w/typing, shorthand	278	45	14	22	7	14
w/o typing, shorthand	175	46	13	18	12	18
College prep.	112	66	16	45	9	18
w/typing, shorthand	80	72	17	56	11	15
w/o typing, shorthand	32	50	14	18	3	24
13-15, total (avg.)	141	66	26	33	7	30

Despite the pervasiveness of post-school training, of all the young men who received some post-school training, only 43 percent of the whites and 40 percent of the blacks indicate that the training was useful in their current (or last) jobs. Training received by males in the military was especially unlikely to be cited as useful. In 1966, 26 percent of the white young men and 14 percent of the blacks who had completed 10 to 15 years of school reported having served in the military service. Eighty-five percent reported some post-basic training. The largest fraction (40 percent) received training in the "clerical" area. "Managerial" or "professional" training was reported by 22 percent; military specialties 13 percent; and only 10 percent received training in what the Census Bureau classified as "semiskilled manual" areas. Thus, specialized military training does not appear to have duplicated the kinds of subjects studied in high school. However, only 20 percent of whites and 9 percent of blacks who reported military training said it was useful on their civilian jobs (see Table 27).

Of the other types of training received by the young men and women, the most striking patterns in perceived use of training received outside regular school are (1) much greater use of company training (61 percent) than of training received from other sources, especially military (20 percent); and (2) significantly lower perceived usage rates for blacks than whites, especially for company training for men (67 versus 29 percent), business college or technical institute for men and women (51 versus 31 percent, and 40 versus 26 percent, respectively), and for other vocational training, such as apprenticeship or government-sponsored programs, for men (53 versus 16 percent).

In only one case--part-time non-degree-credit course work taken at schools and colleges--are black males as likely as white to perceive that training is used in their civilian occupation. In general, for both men and women, the closer the training is to employment, the greater the likelihood that it is perceived as useful in the respondent's job. Company training (except for young black men) stands out in this regard.

Despite the overall pattern of relatively low perceived usefulness of training received outside regular school, two factors should be kept in mind. First, as will be reviewed below, this same training, on average, nonetheless has positive net effects on wages and other measures of successful accommodation to the labor market. Second, the NLS data on perceived use of training are taken from the initial survey--conducted in 1966. Later data may have shown higher rates of perceived usefulness.

Although the NLS data do not contain information on the perceived usefulness of the high school curriculum per se, LSEE data do. Here, the vocational graduates were far more likely than their peers to indicate having received training during high school. Moreover, of those indicating receipt, vocational graduates are also slightly more likely than their peers to say that their high school training was useful on their jobs subsequently (Creech et al., 1977, pp. 2.45-2.47).

TABLE 27

Percentage of Respondents with Post-School Training Who Report Using Their Training on Current (Last) Job[a]

Source and type of training	Men (1966)		Women (1972)	
	Whites	Blacks	Whites	Blacks
Military training	20%	9%	b	b
Business, college, or technical institute	51	31	40%	26%
Company training	67	29	69	62
Correspondence school	b	b	30	25
Other vocational training	53	16	46	40
Adult courses	47	48	28	22

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[a] Men not enrolled with 10-15 years of schooling; women not enrolled with exactly 12 years of schooling.

[b] Not included in questionnaire as a specific item; such training is included in "other" category.

By concentrating on students and those who recently left school, the foregoing section has not addressed the case of the older adult population. For many reasons, vocational educators are currently being advised to devote greater attention to adults. Lecht states that "demographic changes in the next decade can be expected to lessen the importance of the high school age group as the primary audience for vocational programs, and to increase the importance of adults with labor-force experiences as the source of enrollment growth (1977, p. 4)." This will necessitate added flexibility in vocational education offerings, which at the moment are usually offered in the scholastic style and pace. What is meant by the latter term is the common practice of offering a variety of courses, each of which necessitates a few hours a week--e.g., in night school--over an academic term. This style is congenial for many young adults and women without severe economic pressures. But it is often not congruent with the needs and desires of those typically served in the "manpower" mode.

For example, a person enrolling in night school for two semesters of typing, may spend six hours per week over a 30-week period for a total of 180 hours in order to reach 45 words per minute. On the other hand, proprietary schools may be equipped to offer a course of equivalent quality 30 hours per week over a six-week period and the client may prefer it in view of the shorter time to completion. Unfortunately, the national surveys contain little information that can be used to investigate the relative merits or effects of alternative types of adult programs--e.g., CETA/proprietary versus adult vocational education for meeting various kinds of human resource needs. A few years ago, Gerald Somers at the University of Wisconsin undertook a detailed feasibility study of the usefulness of the NLS for assessing the impact of manpower training programs, but sample sizes proved to be too small to permit analysis.

Although the presently available national longitudinal data do not permit such studies, investigative research or simulations might be useful. They could illuminate such factors as the costs (of gaining training) to the trainee, the comparative instructional costs to institutions, and institutional capacities to deliver training under various sets of assumptions. Findings could be useful in roughly charting the terrain for meeting adult needs.

Post-School Outcomes

Research on the relationship between curriculum and labor market and other post-school outcomes may be conceived as constituting the major evidence on the effectiveness of vocational education programs. A large body of work has been completed since the passage of the Vocational Education Act of 1963. However, it does not provide compelling evidence supporting the alleged labor market benefits of high school-level vocational education.

The usefulness of many of the earliest studies is limited by inadequacies in data or methodology, as several reviews of this literature attest (Grasso, 1975; Reubens, 1974; Stromsdorfer, 1972). More recent studies and study plans incorporate improved methodology for handling difficult facets. For instance, in connection with a series of evaluation studies on occupational education programs in New York State (e.g., Fisher et al., 1976), Fisher is trying to implement an improved approach to identifying "control groups" for ultimately estimating the impact of BOCES programs on occupational students. Two control groups are envisioned: general students who resemble occupational students in terms of test scores and sex, and general students conceived by school counselors as being similar to vocational candidates on the basis of both academic and other criteria. These studies also attempt to produce separate estimates for each of a number of conceptually distinct program effects: the effects of occupational programs on earnings via "general" training, via "specific" training, via labor supply, via the option value of the opportunity for additional related post-school training, and via the increased probability of high school completion.

In another example, the forthcoming report of a national study of cooperative education (by Applied Management Sciences, Inc., for the Office of Planning, Budgeting, and Evaluation, U.S. Office of Education) is based upon research designed to define and measure effects from a variety of *perspectives*. Specifically, the study seeks to uncover costs and returns for the cooperative programs' students, for the employers, for the educational institutions, and for society at large.

Research using the national surveys on the labor market and other post-school outcomes of high school curriculum reflects the same wide variation in use of data and methodology that is found in the remaining literature. Vincent's (1969) analysis of *Project Talent* data resembles the early studies based largely on tabular analysis. Information on the weekly earnings of male high school graduates (with no military service or full-time postsecondary education) was taken from the follow-up survey conducted five years after graduation. Average weekly earnings for graduates from each curricular group were compared, but only for males, with these results: the mean weekly earnings for general, college preparatory, and vocational graduates were virtually identical to one another and very slightly higher than for the commercial and agricultural graduates. In addition, since the curricular groups differed by academic aptitude, Vincent reestimated average weekly earnings for the nonvocational graduates by incorporating an adjustment for ability differences (i.e., as if each other group followed the distribution of vocational graduates on academic aptitude). Curricular differences in earnings were greater after the adjustment than before, but the gap between the general and vocational graduates remained less than five cents in hourly wage. Vincent also compared the occupational distributions of white and black male high school graduates from the vocational, general, and commercial tracks. Among whites, the commercial graduates were most likely of all to hold white-collar jobs, and the vocational graduates were most likely to have blue-collar jobs, while the general graduates fell between. Among blacks, all three groups were more likely than whites to hold blue-collar or service jobs (see Table 28).

At this writing, data from the Youth in Transition project had evidently not been analyzed with respect to the labor market outcomes of high school curriculum. In the latest major report from this project, O'Malley et al. (1977) report on the wages, occupations, and unemployment experiences of males about 23 years old in the labor force. They found that "wages and unemployment rates are not nearly so predictable from a number of variables including educational level, family background, and ability as is the status of their jobs" (p. 3-24). While occupational status was found to have direct (net) associations with level of educational attainment, aptitude, ninth-grade GPA, and college preparatory curriculum (i.e., versus any other program), wages and unemployment were found to have weak (or no) relationship with these measures.

The authors explain that the lack of associations with wages or unemployment is due to the fact that the respondents are quite young and restricted to a small range of age. Indeed, the nature of the sample--males in the tenth grade in 1966-- could have been anticipated to produce limited predictability for wages. In the follow-up data for such a sample, the quantity of work experience and the level of schooling completed are related inversely to each other; indeed, in this panel the inverse relation is a relatively strong one. Thus, although both work experience and schooling are hypothesized in economic theory to be potent determinants of wages, their strong inverse interrelationship gives rise to the statistical problems of multicollinearity, making it difficult to measure the net effects of either. Moreover, since Youth in Transition data also contain few minority respondents and no females, even race and sex wage differences are absent.

Analysis of data from the LSEE also reflects the problem stemming from use of data on a limited age group, since the LSEE panel consists of high school seniors in 1972. Creech et al. state:

> Considerable variance in the hourly wage rates was left unexplained by the hypothesized model. It would seem that characteristics of the individual as well as his or her environmental background have little to do with wages earned in the first year out of high school. The only variable possessing a large path coefficient is sex (1977, p. 3.85).

The Youth in Transition report cited earlier did not reveal anything about the association between vocational curriculum and wages, but Creech's report on LSEE does. Results from a path model applied to data

TABLE 28

Occupations of Male High School Graduates Five Years After Graduation

Curriculum	Total	White collar	Blue collar or service
Whites:			
Vocational	100%	34%	66%
General	100	48	52
Commercial	100	63	37
Blacks:			
Vocational	100%	22%	78%
General	100	37	63
Commercial	100	30	70

SOURCE: Project Talent data, derived from Vincent (1969, p. 41).

170

for those working full time reveal positive effects of the vocational program on hourly wages, but the effects are negligible in size.* Unfortunately, it is also true that Creech had applied a single model to all data for males and females, whites and blacks, combined. This involves the implicit assumption that the processes under investigation are governed by the same relationships for each of these groups. According to several large bodies of literature, this is a questionable assumption to make.

Results from the NLS show that about 10 of every 20 male respondents no longer in school were either working or seeking work at each NLS survey; women, of course, present a different pattern. Many do not participate in (or seek) paid employment because of family responsibilities. Others work part time, usually by choice but sometimes because of the work opportunities available to them. Such patterns, by level of education and most recent high school curriculum, are of interest in their own right. In addition, they represent an important area for examining curricular differences in economic outcomes.

NLS data for 1972 reveal that, by and large, the more education a woman has completed, the greater the likelihood of her participation in the labor force and of working full time rather than part time. The participation rates of high school graduates with different curriculum backgrounds were quite similar, but the percentage of employed women working full time (35 or more hours per week) was higher among former occupational students. The full-time rate was especially high for white women from "other vocational" programs and for blacks from business and office studies. These and other differences reflect underlying variation in marital and family status as well as the nature of employment opportunities. For instance, white female business and office graduates were more likely than other whites in 1972 to be "married with children," but less likely to be "not married with no children" (i.e., single, divorced, widowed, without children). Overall, the difference in labor force participation rates between white business and office graduates and white general graduates was only one percentage point. Black female business and office graduates were less likely than their general peers to be "married with children," but more likely to be "not married with children"; the overall difference in participation rates among blacks was only two percentage points. Even so, of women who work, vocational and business and office graduates are more likely to be full time than are general graduates (e.g., among whites the rates are 87, 75, and 72 percent, respectively).

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*Specifically, the findings are that "In Vocation Program" has a small direct effect on hourly wages (in terms of a standardized regression coefficient of 0.04), a small indirect negative effect through "Academic Achievement" (i.e., -0.17 to Achievement, and 0.08 between Achievement and Wages), and a small indirect positive effect through "Level of Education-Occupation Plans" (i.e., -0.18 to Level, and -0.09 between Level and Wages). See Creech et al. (1977, pp. 3.80-3.85).

Youth Unemployment

In 1955, the average monthly number of persons 16 years of age and over who were unemployed was 2,852,000--or, 4.4 percent of the civilian labor force, and youth 16 to 24 years old accounted for 30 percent of total joblessness. In 1975, the number unemployed (a monthly average) stood at 7,830,000 persons--or 8.5 percent of the work force, and youth accounted for close to half (46 percent) of the total. Between these two points in time, total unemployment nearly tripled (2.75x), while the number of unemployed youth more than quadrupled (4.14x).

Many persons perceive vocational education and training as a solution to both unemployment and seemingly related other social problems. Funds for training have been seen as riot insurance. Tom Wicker wrote in the New York Times (April 25, 1975) that "in New York, robberies and assaults are often street muggings--again suggesting the link to unemployment since muggers tend to be youths, and teenage unemployment is now running at 20.6 percent [and] more than 40 percent for black teenagers" (cited by Barton, 1976, p. 2). But this view relies upon assumptions about the relationship between vocational education and youth unemployment.

In some ways the hypothesized role of vocational education is based on arguments similar to those promoting manpower programs to stem unemployment. This has been the subject of some debate (see Hall, 1971, 1972; Shea, 1973; and Feldstein, 1973). The logic advanced by Hall and others seems straightforward: if those without marketable skills can acquire them, if the match between aptitudes and interests and job requirements can be improved, if those seeking work (or workers) can be assisted in making a transaction--then, both vacancies and joblessness can be reduced without involving substantial risks of greater inflation.

The only evidence available from the national surveys on the relationship between curriculum and unemployment is based on the NLS. (Creech et al., 1977, present results on "employment" and "unemployment" rates, but their LSEE data do not measure employment and unemployment in the traditional manner. Moreover, their analyses are based on students and nonstudents combined.)

One study (Grasso, 1975, pp. 148-150) reported no perceptible relationship between several measures of unemployment and high school curriculum among males. The findings, based on multiple linear regression analysis of data on high school graduates up to 1969, controlled for several background variables, including scholastic aptitude, residence in 1969, and years of work experience. From a second study, tabular figures (Grasso and Shea), based on data for a longer period of time (beyond 1969) and covering both men and women, show that results vary according to the precise measure being used. Using employment status as of the various NLS surveys leads to the impression that white male vocational graduates and female business and office graduates may experience unemployment less frequently than their general curriculum counterparts. Using the total number of spells of unemployment between 1966 and 1970 among males shows that vocational graduates are as likely (blacks) or more likely (whites) to have had a spell of unemployment than were general graduates. In any event, general economic conditions (e.g., the 1971 recession) clearly dominate the unemployment experience of these cohorts. Other research points to a strong inverse relationship between a person's age and the probability of being unemployed, but changing economic conditions during the NLS survey years have clearly offset the reduction one would expect from year to year as the cohorts matured.

Occupational Assignment

Grasso and Shea's analysis of NLS data on males out of school in 1973 shows that the occupational distributions of graduates of the several high school curricula resembled one another to some extent (see Table 29).

Except for former college preparatory students who did not go to college, over half of each curriculum group were in craft or operative jobs. (Vocational graduates were most likely, with 67 percent of the whites and 73 percent of the blacks; and they were least likely to be assigned to white-collar positions.) Among the women graduates, differences by curriculum are somewhat greater. A very high proportion of women from business and office programs hold clerical jobs (74 percent of whites and 60 percent of blacks); so do black college preparatory graduates (68 percent). White vocational graduates were especially likely to hold blue-collar positions.

The occupations held by young men with differing levels of education vary in several respects, but male dropouts (especially whites) with 10 to 11 years of schooling are distributed across the occupational spectrum in a way resembling those with exactly 12 years (see Table 30). Nearly equivalent fractions of the two groups are in craftworker and operative categories. Those with 12 years of schooling are somewhat more likely than those with 10 or 11 years to be in white-collar positions: whites (27 and 15 percent) and blacks (14 and 5 percent), while dropouts are somewhat more likely than graduates to be nonfarm (and, for blacks, farm) laborers. By contrast, a substantial difference between graduates and men with "some college" is found in the likelihood of working in white-collar jobs: whites (27 and 50 percent), blacks (17 and 41 percent). These relationships by level of education contain other important findings. First, at each level of education, blacks, on average, hold lower-level jobs than whites. Second, additional years of education (some college for whites, and high school graduation and some college for blacks) make a difference for men of both races in

TABLE 29

Occupation (Major Group) on Current (or Last) Job by High School Curriculum (Most Recent)[a]

(N in thousands)

Occupation	Vocational	Comm. (or bus. & office)	General	College prep.
Men (1972)				
Whites (N)	564	194	2,085	597
Prof., tech.[b]	4%	0%	3%	8%
Managerial	5	9	11	16
Clerical	3	12	7	9
Sales	3	8	4	5
Craftsmen	36	22	31	29
Operatives	31	32	28	15
Service	4	7	6	12
Farm	6	2	4	2
Laborer, nonfarm	7	6	6	5
Armed forces	0	0	0	0
Blacks (N)	77	13	252	53
Prof., tech.[b]	2%		4%	6%
Managerial	3		4	10
Clerical	3		6	6
Sales	0		4	2
Craftsmen	22	c	22	12
Operatives	51		44	36
Service	5		8	9
Farm	0		2	0
Laborers, nonfarm	15		7	19
Armed forces	0		0	0
Women (1973)				
Whites (N)	106	1,180	1,384	854
Prof., tech.[b]	5%	5%	5%	11%
Clerical	29	74	52	55
Sales	14	3	8	8
Service	12	11	16	15
Other	40	7	19	11
Blacks (N)	16	98	233	56
Prof. tech.[b]		6%	2%	2%
Clerical		60	41	68
Sales	c	1	2	0
Service		18	24	5
Other		15	31	25

---

[a] Men and women not enrolled, but interviewed, who had completed exactly 12 years of school.

[b] Detail may not add to 100 percent because of rounding.

[c] Percentages not shown; base less than 25 sample cases.

TABLE 30

Occupation (Major Group) on Current (or Last) Job by Highest Year of School Completed

	Men (1972)			Women (1973)		
	10-11 years	12 years	13-15 years	10-11 years	12 years	13-15 years
Whites (N)	602	3,411	1,738	532	3,597	1,614
Prof., tech.[a,b]	1%	4%	10%	2%	5%	30%
Managerial	8	11	20	2	2	4
Clerical	4	7	11	38	60	43
Sales	2	5	9	4	7	4
Craftsmen	34	31	20	3	1	0
Operatives	32	26	16	17	9	3
Pvt. H.H. workers	0	0	0	6	3	2
Service	5	6	6	24	14	13
Farmers and farm mgrs.	3	3	2	0	0	0
Farm laborers and foremen	1	1	1	1	0	0
Laborers	9	6	5	1	0	0
Armed forces	0	0	d	c	c	c
Blacks (N)	173	394	118	149	408	163
Prof., tech.[a,b]	1%	3%	10%	3%	2%	21%
Managerial	2	5	5	1	1	2
Clerical	1	6	21	22	50	54
Sales	1	3	5	1	1	2
Craftsmen	12	20	13	0	2	0
Operatives	52	44	26	24	20	9
Pvt. H.H. workers	0	0	0	9	4	0
Service	8	7	9	38	20	10
Farmers and farm mgrs.	1	0	1	0	0	0
Farm laborers and foremen	6	1	1	0	0	0
Laborers	16	11	8	2	1	1
Armed forces	0	0	0	c	c	c

---

[a] Men and women not enrolled, but interviewed.

[b] Detail may not add to 100 percent because of rounding.

[c] Category was not included for women.

[d] Less than .5 percent.

gaining access to better jobs. Third, the absence of much difference between high school dropouts and graduates among whites is in sharp contrast with the substantial difference among blacks.

The occupations held by women also vary by level of schooling. While only 2 percent of women with 10 or 11 years of school hold professional or technical jobs, this is true of 29 percent of those with 13 to 15 years of schooling. And while 57 percent of those with 10 to 11 years hold blue-collar or service jobs, only 17 percent of those with 13 to 15 years held such jobs. Much of the variation reflects improved opportunities for high school graduates over dropouts. The occupational distributions of employed women by their level of schooling also reveal some interesting differences by race. Among both high school dropouts and high school graduates, blacks are more likely than whites to hold blue-collar and service jobs, and are less likely than whites to hold clerical jobs; however, this situation does not obtain among those with some college. Here, blacks are more likely than whites to hold clerical jobs. However, in every stratum, young black women are less likely than whites to be assigned to professional or managerial work.

NLS data reveal few differences by high school curriculum among the men in industry affiliation. Among the white men with 12 years of schooling, vocational graduates are more likely than their general counterparts to be employed by firms in agriculture and other industries (11 versus 6 percent), in manufacturing (42 versus 37 percent), and in transportation, communication, and public utilities (11 versus 6 percent). Among comparable blacks, former vocational students are considerably more likely to be employed in manufacturing: 61 versus 42 percent of the generals. The distribution of employed young women by industry group is materially different than that of young men. Practically none of the women is employed in extractive industries, construction, or manufacturing (except for a small proportion of white vocational graduates). Business and office graduates are somewhat more likely than their general peers to be in transportation, communications and public utilities, finance, insurance, real estate, professional and related services (whites only), public administration (especially blacks) and "other services," but in no case is the difference more than six percentage points.

Grasso and Shea also compared graduates on measures related to occupational assignment (Table 31). Usage of their classification of jobs according to preemployment requirements reveals only mild differences between the groups of graduates: male occupational graduates were somewhat more likely than general graduates to obtain jobs dubbed "no special preemployment requirements," but this was not true among females. Usage of other ratings of the skill level of jobs (i.e., the General Educational Development--and Specific Vocational Preparation--ratings taken originally from the Dictionary of Occupational Titles) also fails to reveal substantial differences. Usage of the sex typicality of the occupations held by women (i.e., percent of occupational incumbents who are female) reveals that, on the whole, female high school graduates are

TABLE 31

Preemployment Educational Requirements and Opportunities of Occupation of Current (or Last) Job by High School Curriculum[a]

(N in thousands)

Category	Total (or avg.)	Curriculum (most recent)			
		Vocational	Commercial (or bus. and office)	General	College preparatory
			Men (1972)		
Whites (N)	3,441	564	194	2,085	597
Occupation requires college 4+	15%	11%	18%	16%	19%
Other preemployment training available	48	49	34	48	48
No special requirements	37	40	48	36	33
Blacks (N)	394	77	13	251	53
Occupation requires college 4+	6%	4%	b	4%	14%
Other preemployment training available	45	45	b	49	35
No special requirements	48	51	b	47	51
			Women (1972)		
Whites (N)	3,597	106	1,180	1,384	854
Occupation requires college 4+	6%	11%	4%	7%	8%
Other preemployment training available	62	62	64	62	57
No special requirements	32	26	32	31	35
Occupation 0- 59% female	17%	35%	13%	20%	19%
Occupation 60- 79% female	23	18	22	24	22
Occupation 80-100% female	60	47	65	56	59
Blacks (N)	408	16	98	233	56
Occupation requires college 4+	3%	b	3%	3%	0%
Other preemployment training available	60	b	70	61	44
No special requirements	37	b	28	37	56
Occupation 0- 59% female	22%	b	25%	25%	17%
Occupation 60- 79% female	27	b	20	31	21
Occupation 80-100% female	51	b	55	44	62

---

[a] Men and women not enrolled in school; restricted in the case of women to wage or salary workers employed full time.

[b] Percent not reported; base less than 25 sample cases.

rather likely to be employed in sex-typed jobs. When this is compared with the occupational goals held by NLS high school students in 1968 (Table 32), comparison reveals that college preparatory graduates were more likely to hold stereotypic jobs in 1972 than were the college preparatory students to have desired typical jobs in 1968. By contrast, women from the other curricula were somewhat less so. In any event, business and office graduates were more likely to hold traditional jobs than were general graduates.

Economic Outcomes

As indicated earlier, relatively little useful information on curricular differences in wages or earnings has been produced from the national surveys data, with the exception of work based upon the NLS. In the study by Grasso and Shea, multiple regressions are performed for those employed in 1971 or 1972 (males and females, respectively), separately by sex and race, to explore factors associated with variation in hourly rates of pay, annual wage and salary earnings, and two measures conceived as proxies for long-run labor market outcomes (the Duncan or Bose socioeconomic index of the occupation held, and the 1969 median earnings of full-year incumbents). Explanatory variables include measures of aptitude, socioeconomic origins, extent of work experience, whether post-school training, whether a veteran (males only), tenure with the employer and whether full-time (female only), and whether the wages are covered by a collective bargaining agreement. Also, in the regressions for women, a measure of the degree of sex-stereotyping of her occupation is occasionally included.

Results of the analyses for men indicate that participation in an occupational curriculum during high school makes for little difference in the criterion measures, as compared with completion of a general program. (Selected regression coefficients are reproduced in Table 33.) In the sole instance of a statistically notable finding, it seems that the commercial program (denoted COM) is associated with an advantage of almost 5 points in the Duncan index, as compared with the general track, but the absence of supporting findings from use of the other criterion measures suggests that the jobs of commercial graduates are not higher-paying than those of their general track peers. By way of contrast, participation in post-school training programs outside regular school (including training received in the military denoted "TNG(IM)") is found to exert a positive effect upon the rate of pay and annual earnings of the recipient. It is also associated with higher-status and better-paying jobs (via the Duncan and typical earnings).

Moreover, when Grasso and Shea include the collective bargaining variable (CB) in the hourly-rate-of-pay equation, its coefficient is \$1.03 for white males and \$.46 for black males, both large and statistically significant. The regression coefficients of CB are also significant for both races with respect to annual earnings. It might be noted that in neither case does the inclusion of the CB variable affect the curricular results.

TABLE 32

Proportions of Women Desiring and Holding Sex- Stereotypic Jobs[a]

Curriculum	Proportion of 1968 students desiring a stereotypic job[b]	Proportion of 1972 nonstudents with stereotypic job[b]
Whites (avg.)	53%	60%
Vocational	62	47
Business, office	72	65
College preparatory	42	59
General	55	56
Blacks (avg.)	52%	51%
Vocational	40%	c
Business, office	61	55
College preparatory	54	62
General	50	44

---

[a] Refers to type of work desired at age 35 for students in grades 10-12 in 1968 and to current job for graduates not enrolled in school in 1972.

[b] Sterotypic occupations are those in which at least 80 percent of incumbents are female.

[c] Percent not reported; based on less than 25 sample cases.

TABLE 33

Selected Understandardized Regression Coefficients: Employed Male High School Graduates, 1971[a]

	Explanatory variables[c]					
	VOC	COM	CP	WEXP	MLSVC	TNG(IM)
Whites						
Hourly rate of pay	.10	-.28	-.14	.21**	-.04	.40**
	(.16)	(.24)	(.16)	(.02)	(.12)	(.12)
Annual earnings	487	-252	587	634**	-188	588**
	(431)	(639)	(440)	(67)	(332)	(333)
Duncan score	-1.82	4.96	2.54	1.17**	-1.96*	7.01**
	(1.92)	(2.99)	(1.93)	(.31)	-(1.43)	(1.45)
Typical earnings[b]	-140	434	65	148**	-227	346*
	(330)	(514)	(333)	(53)	(246)	(250)
Blacks						
Hourly rate of pay	-.19	d	d	.10**	.17	.24*
	(.25)			(.04)	(.12)	(.18)
Annual earnings	-376	d	d	217**	385	417
	(631)			(108)	(556)	(484)
Duncan score	-1.15	d	d	-.69	-.06	8.32**
	(3.12)			(.54)	(2.52)	(2.34)
Typical earnings[b]	-324	d	d	8	63	831**
	(421)			(73)	(340)	(315)

---

[a] Regressions control for other variables listed in the text. Standard errors in parentheses.

[b] Refers to typical earnings in the respondent's occupation: i.e., median 1969 earnings of all male full-year workers in the occupation, from the 1970 decennial Census.

[c] VOC, COM, and CP refer to vocational, commercial, and college preparatory curriculum respectively; and regression coefficients represent the net difference between each curriculum shown and the general curriculum. WEXP is the number of years since leaving school, except for years spent in the military service. MLSVC is a dichotomous variable denoting any post-school military service. TNG(IM) is a dichotomous variable denoting receipt of any post-school training, including that received in the military beyond basic training.

[d] Coefficient not reported; inadequate sample cases.

*Significant at .10 level (1-tailed t-test except for curriculum variables).

**Significant at .05 level.

The pattern of relationships is much the same with data for high school and college dropouts as it is for high school graduates. The occupational curriculua regression coefficients are again nonsignificant. Interestingly, post-school training is found to add as much or more to the earning power of high school dropouts as it does for graduates and men with 13 to 15 years of schooling. In order to test for "interaction effects" of curriculum with other variables, Grasso and Shea also regressed hourly rate of pay on the explanatory variables, for each curriculum population separately. Among the results: scholastic aptitude makes a much greater contribution to the pay of vocational than general (or, in fact, college preparatory) high school graduates; years of work experience make little or no difference for black vocational graduates, and among whites its coefficient is considerably smaller than for general or college preparatory ($.13 versus $.23 and $.30); and post-school training has a slightly greater effect on the hourly earnings of vocational than of former general students. The salience of the aptitude variable for vocational students may suggest that the development of basic skills for vocational students should be regarded as an important task.

Finally, the implications of curriculum for the growth in earnings over time were examined directly by relating curriculum to the actual change in pay from 1966 to 1971. Results suggest that, if anything, having been an occupational student reduced the growth of rate of pay over time. Compared with a former general student, VOC subtracts $.28 from the five-year change in rate of pay (see Table 34). Once again, the data seem to point to lower pay in the long run for vocational graduates. Among whites (but not blacks), measured mental ability correlates rather strongly with increase in rate of pay. A 10-point difference in SA means $.20 over the five-year period. Also, post-school training received between 1967 and 1971 ("TNG(IM)67-71") is associated with large gains in wage rates: $.44 for whites, and $.61 for blacks, a very important finding, for it suggests that manpower and other training outside regular school have had beneficial effects on the earning power of young men.

In contrast to the results for men, the evidence for women strongly indicates labor market benefits for vocational education in high school. Results for the business and office program show a $.27 advantage in hourly wage for whites, and $.26 for blacks (see Table 35). The impact on annual earnings is also great: $665 for whites, and $683 for blacks. Each coefficient is statistically significant. Results for the measures of typical earnings also indicate for white women (but not black) a positive effect. Unfortunately, the number of other women graduates from other occupational curricula was too small to permit confident conclusions on the effects of their high school programs.

As was true among the men, post-school training seems to pay for the women, adding about $.10 per hour to rate of pay for both races (though the coefficient is nonsignificant for blacks). The longer-term consequence of training may be more substantial, since it is found to exert a positive effect upon the Bose occupational index for both races.

TABLE 34

Change in Hourly Rate of Pay, 1966 to 1971: Regression Results for Men Not Enrolled in 1966 or 1971[a]

Explanatory variables and statistics	Arithmetic change, 1966-71			Percentage change, 1966-71		
	Total	Whites	Blacks	Total	Whites	Blacks
SA	.02**	.02**	-.02	.7	.7	-1.3
	(.006)	(.009)	(.01)	(3.5)	(.4)	(1.0)
SEO	.03	.02	.06	2.6	1.8	8.5
	(.05)	(.06)	(.10)	(2.6)	(2.9)	(8.4)
VOC_{71}[b]	-.28*	-.22	c	-5.2	.5	-34.3
	(.21)	(.25)		(10.8)	(11.9)	(29.8)
COM_{71}[b]	-.23	c	c	-20.0	-18.5	c
	(.33)			(16.9)	(17.5)	
CP_{71}[b]	-.05	-.02	c	-4.7	-4.4	c
	(.24)	(.27)		(12.0)	(12.7)	
$SOUTH_{71}$	-.67**	-.69**	-.27	-25.4**	-29.2**	-19.8
	(.18)	(.21)	(.38)	(9.1)	(10.0)	(30.9)
$SMSA_{71}$	.52**	.63**	.41	21.3*	23.8**	20.2
	(.17)	(.22)	(.35)	(8.9)	(10.3)	(20.8)
$TNG(IM)_{66}$	-.03	-.02	c	-8.3	-3.1	-48.3
	(.18)	(.20)		(9.0)	(9.5)	(36.7)
$TNG(IM)_{67-71}$	.44**	.44*	.61*	23.5*	15.6	63.6**
	(.20)	(.24)	(.34)	(10.1)	(11.2)	(28.1)
$\$/HR_{66}$	-.52**	-.53**	-.35	-52.8	-49.6**	-73.7**
	(.09)	(.10)	(.22)	(4.7)	(4.9)	(17.8)
Constant	.89	.83	3.27	110.7	107.4	248.9
R^2	.13	.14	.18	.26	.26	.34
F	6.24**	5.06**	1.61	14.67**	11.53**	3.90**
N	423	331	78	423	331	78
Mean (Y)	1.72	1.74	1.56	82.5	80.0	98.8
SD(Y)	1.65	1.70	1.30	91.1	86.3	118.8

[a] Men employed for wages or salary both years whose highest year of school completed was 12 in both 1966 and 1971. Standard errors in parentheses.

[b] Reference group: general curriculum. [c] Variable not included; inadequate sample cases.

*Significant at .10 level (1-tailed t-test except for curriculum variables).

** Significant at .05 level.

TABLE 35

Selected Unstandardized Regression Coefficients: Employed 28 female high school graduates, 1972[a]

Dependent variable	Explanatory variables[c]					
	VOC	B&O	CP	WEXP	TNR	TNG
			Whites			
Hourly rate of pay	d	.27** (.08)	.24** (.10)	.10** (.02)	.01** (.002)	.10* (.07)
Annual earnings	d	665** (181)	225 (219)	222** (38)	25** (4)	189 (162)
Bose score	d	3.34** (.84)	-.03 (.99)	.40** (.17)	.01 (.02)	1.31** (.74)
Typical earnings[b]	d	262** (127)	198 (150)	32 (26)	1 (3)	-81 (112)
			Blacks			
Hourly rate of pay	d	.26** (.12)	d	-.06** (.03)	.02** (.003)	.11 (.11)
Annual earnings	d	683* (365)	d	-54 (81)	54** (10)	64 (340)
Bose score	d	-.30 (1.90)	d	-.83** (.41)	.04 (.05)	4.19** (1.73)
Typical earnings[b]	d	-182 (216)	d	-3 (46)	-5 (6)	-17 (196)

---

[a] Regressions control for other variables listed in the text. Standard errors in parentheses.

[b] Refers to typical earnings in the respondent's occupation: i.e., median 1969 earnings of all female full-year workers in the occupation, from the 1970 decennial Census.

[c] VOC, B&O, and CP refer to vocational, business and office, and college preparatory curriculum respectively. WEXP is the number of years since leaving school in which respondent worked at least 6 months. TNR is tenure with current employer. TNG is a dichotomous variable denoting receipt of any post-school training.

[d] Coefficient not reported; inadequate sample cases.

*Significant at .10 level (1-tailed t-test except for curriculum variables).

**Significant at .05 level.

Among the women, the addition of the collective bargaining (CB) variable added $.44 and $.11 in the hourly-wage equation for whites and blacks, respectively; these are smaller than were found for men. Unfortunately, among the high school dropouts and among those with some college, the numbers employed in 1972 were too small to permit analysis of curricular differences among these groups. This points to the importance of adequate sample size in the national surveys, for analysis of subsets of respondents will invariably be desired.

Finally, it is interesting to note the effects on wages and earnings of women holding stereotypically female jobs. Of the high school graduates, those from the business and office programs held such jobs and enjoyed a clear advantage--in both hourly wage and annual earnings--over those from other high school programs. Indeed, the results from the wage and earnings regression demonstrate that the impact of employment in sex-typed occupations is *not* a simple or straightforward matter.

As shown in Table 36, both wages and earnings are found to rise with the level of education, but the index of typicality of occupation is also found to rise. For instance, the mean value of the index for those with 10-11 years, 12 years, and 13-15 years of schooling is 69.3, 74.8, and 77.6, respectively. However, the relationship between wages (or earnings) and the index *varies* by level of schooling. This can be illustrated by taking a literal interpretation of the regression results to derive estimated effects of a change *from* a job in which 33 percent of all the incumbents are females *to* a "typically female" one (i.e., 66 percent are females). Among high school dropouts, this change would result in a *loss* of $.33 per hour and $639 per year. Among high school graduates, the *loss* in hourly wage would be $.10 but there would be no significant difference in annual earnings. Among those with less than the baccalaureate degree, there would be no significant difference in hourly wage, but a *gain* of $529 in annual earnings. Also, as shown in the table, the effects vary by race. These results suggest that those who criticize vocational programs on the basis of occupational sex-segregation would be wise to carefully reconsider the alternative occupations available now or in the future for the average young woman.

Psychological Outcomes

As indicated earlier, Echternacht's (1975) LSEE analysis of youth at the end of their high school programs (i.e., high school seniors in the LSEE) uncovered the following differences between vocational and general high school seniors: as compared with general students, vocational students were less alienated from school, had had less difficulty with school, and gave their schools and counseling higher ratings. They also felt that they had had more freedom in choosing their courses and expressed less concern over their post-school job placement. Some of these results may be conceived as outcomes of programmatic variation. Likewise, the finding that vocational students registered higher self-esteem than did general students, especially among blacks, but lower "control of environment," especially among blacks, may be indicative of curricular effects.

TABLE 36

Effects of Employment in Stereotypically Female Occupations on Hourly Rate of Pay and Annual Wage and Salary Earnings by Women

Category	Level of education				
	10-11 yrs.	12 yrs.	13-15 yrs.	Whites, 12 yrs.	Blacks, 12 yrs.
Results from wage regression:					
Mean hourly wage[a]	$2.25	$2.58	$3.35	$2.58	$2.54
Mean percent female[b]	69.3	74.8	77.6	75.2	69.3
Simple correlation	-.305	-.049	.009	-.062	.081
Partial regression coefficient	-.010	-.003	+.002	-.003	.000
(t-value)	(-2.94)	(2.04)	(0.30)	(-2.05)	(0.07)
Regression N	80	599	171	474	119
Results from earnings regression:					
Mean earnings[c]	$3,215	$4,174	$5,510	$4,158	$4,284
Mean percent female[b]	69.4	74.5	75.5	75.0	68.3
Simple correlation	-.263	-.014	.052	-.021	.063
Partial regression coefficient	-19.2	- 2.9	15.9	-3.5	2.1
(t-value)	(-2.27)	(-0.99)	(1.91)	(-1.06)	(0.33)
Regression N	77	558	135	445	109
Estimated effects of change of occupation from one that is 33% female to one that is 66%:[d]					
In hourly wage	-.33	-.10	n.s.	-.10	n.s.
In annual earnings	-639.	n.s.	+529.	n.s.	n.s.

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[a] Refers to hourly rate of pay on primary job held during 1972 NLS survey week.

[b] Refers to the mean of the following: each respondent was assigned a value according to her 1972 occupation--namely, the proportion of all workers in that occupation who are females, taken from 1970 Census data.

[c] Refers to total wage and salary earnings during the year ending in the 1972 NLS survey week.

[d] The abbreviation "n.s." refers to "no significant difference."

However, since the first LSEE data collection occurred in the Spring of the senior year, it is hazardous to interpret these findings as outcomes of the high school program, because they also may be reflecting preexisting differences. Youth in Transition data on males from their sophomore *through* their senior years may be more suitable for analysis of psychological curricular effects, but there is little available published work bearing on these topics. From personal communications with Terrence N. Davidson about Youth in Transition data, it appears that a reason for male vocational graduates' high regard for their program is that they received much information and counseling from their vocational teachers, more than did the other students from theirs. Vocational students had been given relatively little time with the regular school counselors, but those who had valued it highly.

In the NLS base-year surveys, young people out of school were asked: "Considering all the experiences you have had in working or looking for jobs since leaving school, do you feel that not having more education has hurt you in any way?" In three out of four sex-race groups, high school graduates from an occupational program were less likely than their general curriculum counterparts to feel hurt (see Table 37). Differences are especially striking among white men: 28 percent from occupational programs and 42 percent from general programs felt hurt. The comparable proportions for black women were 50 and 65 percent. The contrary pattern holds only for black men: 69 percent of those from an occupational program report being hurt, compared with 57 percent from a general program of studies. The proportions for white women are uniformly low, and vary little by curriculum. Four out of five male graduates who felt *hurt* offered as a reason not being able to get as good a job as they would like, but differences by race or curriculum in the reported reasons were minor.

Testifying, perhaps, to the value society places on education--in rhetorical terms, at least--an overwhelming majority of youth would like to have more education or training. More than seven of every ten respondents in each sex-race category responded affirmatively to a question: "If you could, would you like to get more education or training?" Across the board, blacks were more likely than whites to say "yes," and white women were least likely to say "yes." However, curricular differences are very small.

When high school graduates *do* participate in postsecondary education and training, the types of programs pursued are likely to differ, as shown earlier in this section, but their satisfaction with the post-high school activity does not appear to differ by curriculum, according to data from the LSEE (Creech et al., 1977, p. 3.61). Of those who work, the evidence varies on the relation between their job satisfaction and their curriculum.

Data from the NLS base-year surveys for both men and women indicate that occupational graduates were more satisfied than were general graduates with their jobs, but the differences were far smaller in the follow-up surveys in the early 1970's (than in the base-year survey in 1966). By

TABLE 37

Perceived Adequacy of Educationa and Attitude Toward High School Experience by Men and Women Not Enrolled Who Had Completed Exactly 12 years of School

Item and curriculum	Men (1966)		Women (1968)	
	White	Black	White	Black
Percent who feel not having more education has hurt:[a]				
Voc. and com. (or bus. & off.)	28%	69%	30%	50%
General	42	57	34	65
College preparatory	50	70	38	61
Percent who desire more education or training:[a]				
Voc. and com. (or bus. & off.)	86	97	69	93
General	85	91	71	90
College preparatory	89	100	79	97
Percent who disliked high school experience:[a]				
Voc. and com. (or bus. & off.)	11	0	5	2
General	7	3	10	4
College preparatory	11	0	8	7

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[a] See text for precise wording of each question.

then, the overall level of satisfaction had fallen, notwithstanding the fact that the cohorts were older and had had more work experience. LSEE data for 1972 show minor differences by curriculum (Creech et al., 1977, p. 3.84) in job satisfaction measured in October 1972 (i.e., at the six-month post-graduation follow-up survey).

Young men in the NLS were asked in 1971 whether they felt they had progressed in their work since 1969. The higher the respondent's level of education, the larger the proportion who report they have "progressed" in their work and the smaller the fraction who perceive themselves as having "moved backward." The ratio of the two responses exceeds 10:1 for whites, at each attainment level. Among young black men, however, the ratio exceeds 5:1 only for general program graduates, and is below 3:1 for high school dropouts. Fewer blacks than whites report progress; more say they moved backward. Among whites, vocational graduates perceive greater progress in their work than those from the general curriculum, but the differences are relatively small.

At various interviews, NLS respondents were asked: "So far as your overall financial position is concerned, would you say you are better off, about the same, or worse off now than you were at this time last year?" Even as the economy entered a recession, most young men and women felt better off in 1971 than 1970. A small number of male graduates (14 percent of the white and 11 percent of the black) felt worse off. Differences by curriculum, controlling for highest year of school completed, are again minor.

In 1966, when they were 14 to 24 years of age, very few young men in the NLS out of school were already in the occupational category in which they aspired to work at age 30: 28 percent of the whites with 10 to 15 years of education and 11 percent of the blacks. Black men with 12 to 15 years of schooling were about 20 percentage points more likely than white to be in an occupation different from the one they would like to have (91 and 71 percent). Among both color groups, the more education a person has, the more likely he is to rate his chances of obtaining his goal as "excellent" and the less likely to rate them "fair" or "poor." On the whole, blacks at each attainment level feel their chances are less good than whites. Black graduates from an occupational program are the most pessimistic, while blacks from a college preparatory program are among the most optimistic. Among white graduates, curriculum background is essentially unrelated to either (1) being in the occupation to which one aspires or (2) rating the average chances of attaining one's goal.

Summary

This review directs attention to research on vocational education that is based upon the several national longitudinal surveys of youth: Project Talent, Youth in Transition, the National Longitudinal Surveys (of Labor Market Experience; NLS) and the Longitudinal Study of Education Effects (LSEE; also known as the National Longitudinal Study of the

High School Class of 1972). More work has been completed with the NLS than with the other data, which remain relatively unexplored with respect to issues on vocational education. Nonetheless, there is a substantial body of available evidence in the aggregate.

The review began with a discussion of methodological issues in the classification of students, in the identification of vocational education students, and in the necessity to analyze the experiences of male and female vocational students separately. Then, the review focused on evidence concerning the characteristics of students in the several major high school curricula. Among males, Talent and Transition data seem to show that vocational and general students differ markedly with respect to family background and scholastic aptitude, but NLS and LSEE data do not show these great differences. However, the same was not true among females; the vocational students are enrolled predominantly in (white-collar) business and office programs, and Talent, the NLS, and LSEE all agree that there are mild differences in background and ability between vocational students and their peers.

Evidence suggests that occupational students do not like high school as much as other students, but that both occupational and other students [illegible] to like very much the vocational courses that they have taken, and that the vocational students like their vocational programs. Enrollment in an occupational high school program is associated on average with relatively low educational goals (especially among white female business and office students), but there are exceptions; for instance, nearly half of the black male occupational students in the 1966 NLS survey desired to attain four or more years of college.

The occupational goals of high school students follow seemingly logical patterns: male vocational graduates are especially likely to desire to work in the crafts, female business and office students in clerical and secretarial jobs, etc. College preparatory students are aiming for professional and technical jobs. The goals of the students from the general program--some of whom are desiring college and others are note--lie between the occupational students' goals and the college preparatory students' goals. Interestingly, data from the NLS do not indicate a stronger intent to work (at age 35) among female vocational students than among female general track students. However, female business and office students are particularly likely to deisre jobs that are sex-typed and that typically pay less per year than the jobs desired by their general track peers. It may be said that occupational students desire jobs requiring special skills, but so do their peers.

NLS data on tests of the occupational information possessed by youth show that male occupational students know less than their general track peers about a variety of occupations; however, the reverse is true among the young women. There is little evidence as to why the vocational students have enrolled during high school in such programs; i.e., the extent to which "curricular choice" was volitional, was based on adequate information about the various alternatives, and so on.

With respect to the *outcomes* of vocational education programs, the review points to a problem in the national surveys' data: there is very limited information on the duration or extent of the "program," and curriculum transfers during high school are difficult to identify. With respect to *educational* outcomes, the evidence is not clear on the net effects of vocational high school programs in the area of basic skills. There may be both (1) positive effects, such that vocational students are motivated to greater academic achievement because they perceive the real-world applicability of academic subjects, and (2) negative effects resulting from less time being spent in school subjects that foster the development of basic skills. However, vocational-technical and cooperative programs may not have the same effects at the postsecondary level. There is little available documentation about preexisting differences between the vocational student and his peers at each school level.

The evidence on the effects of vocational programs on stemming high school dropout rates is mixed: results based on cross-sectional analysis conflict with those from longitudinal analysis on whether vocational programs help *males* achieve their high school diplomas. However, for females, results suggest that occupational (i.e., business and office) programs do enhance completion of high school. With respect to the effects of vocational programs on high school graduates' attainment of postsecondary education and training, vocational high school programs appear to have net negative impact on attainment of formal schooling. Moreover, results from path analysis of the educational attainment process suggest that vocational programs' net negative effects persist even after controlling for educational aspirations. It also seems that continued enrollment in a vocational program has an independent negative impact on *aspirations*. Specifically, among the black vocational students who held high educational goals, attainment is depressed owing to their enrollment in vocational programs during high school.

Nevertheless, after completion of regular school, vocational graduates receive training of various kinds (especially company training). Graduates of the general track seem to attain more formal school or post-school institutional training (e.g., from business colleges or technical institutes). Among women, it is interesting to note that those who had had some typing or shorthand in high school were relatively more likely than their peers to report additional clerical or secretarial training after high school graduation (i.e., of those who did not go to college).

From all of these findings it is reasonable to conceive of secondary-level vocational programs as alternatives to the traditional academic programs, and of all the curricula as serving both vocational and *prevocational* purposes. Postsecondary education and training programs of various kinds and the availability of employer-sponsored training constitute, in the aggregate, a wide array of opportunities for developing and pursuing career interests. The vast majority of NLS respondents out of school expressed a desire to obtain additional education or training, and this did not vary by high school curriculum.

With respect to the labor market effects of the various high school curricula, attention was focused on differences between former occupational students and former general students. Findings relating to unemployment experience were mixed, in the sense that the use of alternative measures yields conflicting evidence. Significantly, it appears that the single most important factor relating to variation in unemployment among young workers during the period studied was the state of the U.S. economy.

With respect to occupations held by high school graduates who did not go to college, the occupational distributions for each curriculum are found to overlap one another to a great extent. This is illustrated with data for young whites. Among *males*, 67 percent of former vocational students held crafts and operative jobs, but so did 59 percent of former general students. Also, while 29 percent of former commercial students held white-collar jobs, so did 25 percent of former general students. Among *females* 74 percent of former business and office graduates worked in clerical and secretarial positions, but so did 52 percent of their general program peers. Among both males and females, both blacks and whites, less-than-baccalaureate postsecondary education and training is associated directly with the likelihood of holding professional and rechnical jobs. In every level of education, blacks held lower-level jobs than whites, and females were far more likely than males to hold clerical jobs.

With respect to wages and earnings, findings (based largely on the NLS) differed by *sex*. Among males, enrollment in an occupational program during high school was on average unrelated to rate of pay and to annual earnings. (It should be noted, however, that analysis by specialty area, such as welding and automobile repair, was not possible.) Indeed, some evidence suggests that vocational graduates enjoyed slower rates of growth in wages over time than did general graduates. Among the females, business and office graduates *were* found to enjoy higher rates of pay and annual earnings than were general graduates.

Postsecondary training appeared to produce benefits in wages and earnings for high school graduates of either sex (and, significantly, for high school dropouts, too). Similarly, working in jobs covered by collective bargaining agreements had its advantages in terms of wages, especially for men.

For women, it was found that over half the graduates not going to college worked in sex-typed jobs, in every curriculum group, but interestingly this did not necessarily mean lower wages. Business and office graduates were especially likely to do so, but they enjoyed a wage advantage over their peers. Among women with some years of college (but less than a baccalaureate degree), those who worked in "female" jobs enjoyed an advantage over their peers. The results suggest that, during the period studied, women working in non-sex-typed jobs were not necessarily any better off than the other young women. The effects of holding a traditional job varied by level of schooling and by race, permitting no simple conclusion to be drawn.

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194

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III. ISSUES IN PROGRAM EVALUATION

A major requirement of the 1976 Amendments is that the states and the Federal government are to conduct evaluations of vocational education programs designed to impart entry-level skills. To NIE has gone the task of studying the means of assessing quality and effectiveness. The next three papers discuss the implications of such a mandate. In one of the unpublished preplanning papers on evaluation, "Toward Quality Vocational Education Programs," Alan Sheppard, Associate Professor of Education, Virginia Polytechnical Institute, gives some thought to what "quality" and effectiveness mean in this context:

> Concern about the quality of programs in education transcends vocational education and the field of professional education. The concept of "quality" is an illusive and ill-defined concept.
>
> Considerations of quality involve considerations about an end product or resulting set of conditions, a set of specified characteristics, or standards upon which judgements can be based. In some cases, the matter of quality is a relatively simple one. However, in vocational education we have no widely agreed upon specifications and we have no clearly defined uniform standards.
>
> It appears frequently that the widespread differences of view about quality in vocational education programs are differences about the process used to measure and/or document such quality.

Although the specificity and the exactness of intent are common problems to evaluations in general, what Sheppard is saying has particular application to the field of vocational education. The decentralized characteristics of the vocational education enterprise intensify the complexity of these issues. The authors in this section explore the implications of this problem.

W. Norton Grubb examines the assumptions of vocational education, which he describes as vocationalism. His paper, "The Phoenix of Vocational Education: Implications for Evaluation," argues that throughout the history of the vocational education movement these same assumptions appear in varying dress. He thus stresses the need for looking at vocational education in historical perspective:

> Rather than evaluating vocational education according to any number of conceivable goals which might be set for it, a historical perspective provides a way of concentrating on a few salient aspects of vocational education, those which can continue to emerge whenever vocationalism has been promoted.

Grubb's argument is that quality and effectiveness have valences that are not without political consequences.

By contrast, Thomas M. Bogetich and Norma Phillips Lammers, in their paper "The Effects of National Policy on Vocational Education Evaluation," look at the effects of national policy on vocational education evaluation. They cite current problems as they appear from their perspective in the administration of the legislation at the state and local levels and conclude with a list of proposed solutions to the problems that they anticipate will arise from the new requirements of the 1976 legislation.

This section ends with a discussion by John Walsh entitled "Vocational Education: Education or Short-Run Training Program," in which he makes the distinction between vocational education as a form of education and vocational education as part of a manpower or human resources delivery system. Confusion over these two purposes, he feels, adds to the controversy that surrounds vocational education evaluation. Walsh also directs attention to the degree to which federally funded vocational education is one of several different human resource public policies.

THE PHOENIX OF VOCATIONAL EDUCATION: IMPLICATIONS FOR EVALUATION

W. Norton Grubb

Vocational education continues to be popular despite persistent criticism and uncertainty about its value. Again and again it has been attacked for failing to fulfill the goals which have been set for it. Yet every period of intense criticism has been an occasion for the renewal of vocational education, for a reassertion of its fundamental validity, and for a statement of confidence in its future. The 1970's are no exception. Despite distinctly mixed evidence on the value of vocational education and continued fears that it leads to class, racial, and sexual segregation, such doubts have stimulated further efforts to correct the flaws in vocational education and to develop new approaches like career education rather than a dismissal of vocational education as inherently flawed. Like the legendary phoenix, at every occasion vocational education rises from the ashes of its former self.

One cynical explanation for this phenomenon is that the vocational education establishment, particularly educators and researchers, is by now too powerful to be eliminated easily. But the historical persistence of vocational education and the support which various forms of vocational education have received from outside the educational establishment indicate that there is more than self-interest at work. Indeed, vocational education has been most insistently promoted during periods of stress and transition--the Progressive Era, the 1930's, the 1960's and the 1970's. Vocational education has been promised to be capable of solving economic problems like those of productivity and unemployment, educational problems like those of the legitimacy and purpose of schooling, and social problems like the integration of minority groups into the mainstream of society. Specifically, it has affirmed a particular--and politically charged--image of work and the relationship between schooling and work. These are more fundamental reasons for the persistence of vocational education, reasons whose examination facilitates a deeper understanding of the role vocational education has served.

The core assumptions of vocational education, which I will describe as vocationalism, have emerged in slightly different forms during the past hundred years, from the manual-training movement of the 1880's to the career-education movement of the 1970's. Some commentators have chosen to emphasize the differences in the various forms vocationalism has taken, but from a historical perspective the similarities are what stand out.

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I contend that the similarities, both in the goals promoted for vocationalism and in the criticisms raised against it, are more important than the particularities of any one piece of legislation or the idiosyncracies of any one spokesperson, since these similarities describe the most basic political appeal of vocational education, as do the most persistent (but politically less powerful) criticisms.

Rather than evaluating vocational education according to any number of conceivable goals which might be set for it, a historical perspective provides a way of concentrating on a few salient aspects of vocational education, those which have continued to emerge whenever vocationalism has been promoted. I will initially summarize in brief the history of vocational education, in order to establish the similarities in purpose and in criticisms over the past hundred years. With those similarities in hand, the implications for evaluation criteria will be straightforward. I will then develop (in a preliminary way) some questions, which have been historically persistent yet never answered, about the skills required in work and those effectively taught in school settings. Finally, I will return to the issue of why vocational education has been so consistently proposed as a solution to a variety of problems, as a way of indicating once again the political consequences of vocationalism.

Historical Background of Vocational Education

The vocational education movement of the Progressive Era had the appearance of a new religion: a wide variety of individuals--businessmen, educators, social reformers, and finally union leaders--supported it, all for somewhat different reasons.[1] Vocational education was the panacea of the moment. Businessmen, extraordinarily active in the movement, supported it because vocational training promised to increase the supply of skilled workers and end skill bottlenecks (situations where some are unemployed while there are openings in occupations requiring different skills) and to instill the kinds of attitudes toward work that they found appropriate, particularly (they hoped) anti-union sentiments. For educators, vocational education provided a way of reestablishing the legitimacy and purpose of schooling, which had come under attack for its irrelevance and ineffectiveness. Vocational education would make schooling more relevant to adult life, thus more interesting and meaningful to students; the serious dropout problem would be solved and the efficiency of the schools assured. Vocational education also could provide for the influx of lower-class and immigrant students into the high school; vocational courses would provide training better suited to their backgrounds and to their "evident and probable destinies" than would the regular academic program. Social reformers, like settlement-house and charity workers, joined educators in their enthusiasm for the social consequences of vocational education. It would reestablish the moral component of public schooling, provide training and thus employment for the immigrants and Southern blacks who were crowding the cities, and reduce poverty, shiftlessness, and causes of moral decay. By preparing pupils for employment, it would eliminate the "wasted years" syndrome, the period between age fourteen (the usual limit of compulsory attendance) and age sixteen (the age at which jobs were generally available), and thereby reduce the problems of truancy, delinquency, and crime.

In the flush of enthusiasm, dissent against vocational education went almost unnoticed, partly because the dissenters were not very powerful politically and partly because the conflicts were local rather than national in scope. The most intense conflicts involved capital and labor and who would control vocational education. Organized labor feared most of all the possibility of extreme specialization in vocational courses. In seeking public rather than private sponsorship and the participation of labor in all decisions, union leaders hoped to avoid training for specific jobs which might then become obsolete and to prevent the interests of the business community in more (and thus cheaper) skilled labor from dominating the interests of workers in training which would reap benefits for them. At the national level, organized labor joined the vocational education movement rather than be left completely out of power, but the suspicion that vocational education was simply a way of providing a second-class education in the interests of class stratification persisted, and conflicts at the local level were sometimes protracted and bitter.

The depression of the 1930's focused attention on vocational education as a solution to unemployment. Various New Deal programs--the Civilian Conservation Corps, the National Youth Administration, and the Works Progress Administration--offered nonschool vocational training. The George-Ellzey Act (1934) and the George-Dean Act (1936) increased federal funding and extended the umbrella of the Smith-Hughes Act of 1917 to distributive education. But the passage of the George-Dean Act was accompanied by such controversy as to cause the formation of a national committee to review vocational education. The report of that committee, the Russell report, had almost nothing good to say about vocational education.[2] By promoting an overly narrow concept of vocational education and by creating a dual educational system, the Smith-Hughes Act and its successors were found guilty of having trained students in ways that were too specific and that denied them flexibility in employment and of having created a "caste system" in the schools in which class and curriculum were related. And despite the narrowness of training, there was substantial evidence that trade and industrial training has no economic payoff, with training generally failing to correspond to available jobs. Despite this list of indictments, the Russell report went on to reaffirm the principles of vocationalism, though it recommended that vocational education be made more general and flexible. The report itself had little impact, as vocational education was caught up in specific-skill training for World War II production. But it was significant as an indication of the failings of vocational education in its first two decades and for setting a pattern that later reports followed.

During the late 1940's and 1950's vocational education took a more generalized form as an aspect of Life Adjustment Education. Declaring that the schools were failing to educate the 60 percent of youth who were neither going to college nor being trained for skilled trades in existing vocational programs, Life Adjustment held that the schools could correct this deplorable situation by redirecting all schooling toward practical ends, making all schooling stand the test of relevance to daily problem solving. But despite the seriousness of its premises, Life Adjustment was too general in its scope and offered little that was new; it soon became a caricature of anti-intellectualism in American life and of the status quo in American society.[3]

Vocational education emerged again in the 1960's. With high unemployment rates among unskilled workers and the specter of technological unemployment, President Kennedy appointed a national commission to review vocational education. As had the Russell report, the new committee sharply criticized vocational education for its narrowness, its lack of economic benefit, its insensitivity to labor-market conditions.[4] But unlike the Russell report, it went on to affirm the value of vocational education, particularly in addressing the problems of technological unemployment and the unique educational and economic problems of minorities and in resolving the institutional problems of dropouts and the relevance of schooling. The Vocational Education Act of 1963 which emerged from this review attempted to redirect vocational education by making training more flexible and general and by focusing its efforts on those who had been left on the fringes of the labor market, minorities in particular.

But despite the fact that most vocational educators view the 1963 Act as a major shift in vocational education policy, it evidently failed to make much impact on vocational practices. In 1968 the Advisory Commission on Vocational Education reported that the two major objectives of the 1963 Act, making vocational training more general and targeting training on minorities, had by and large been ignored. The issues stressed in the 1968 report were almost identical to those emphasized in 1963--the problems which technological advancement caused in the form of unemployment and underemployment and the failure of vocational education to serve the hard-core unemployed, again, primarily minorities.[5] As happened after the 1963 report, these criticisms took the form of new legislation, the 1968 Vocational Education Amendments, designed once again to make vocational education more flexible and to provide commitment to the problems of the disadvantaged.

The cycle of criticism and reform in vocational education has been repeated once more in the 1970's. Among other criticisms of poor administration and lack of responsiveness, a 1974 review by the Comptroller General repeated the familiar judgement that vocational education programs persisted in training individuals for nonexistent jobs and thus failed to address changing manpower requirements, and that, despite the 1963 Act and 1968 Amendments, disadvantaged and handicapped students had not been given appropriate attention.[6] With the development since 1968 of a more extensive literature evaluating vocational education, the doubts about its effectiveness in preparing students for jobs have been increasingly well documented.[7] But the Comptroller General's report, like its predecessors, stressed that vocational education should be revised, revitalized, and extended.

The 1976 Amendments to the Vocational Education Act of 1963 made new efforts to extend vocational education, expanding eligibility to include those seeking retraining in addition to the high school and junior college students normally the targets of vocational courses. To earlier fears that vocational education had neglected minorities were added the charges that it also had perpetuated sexual stereotypes and sex-based stratification and that it had neglected the special problems of bilingual pupils. In response, a special effort was given in the 1976 Amendments to eliminate sex stereotyping in vocational education and to provide for bilingual vocational training. In order to address once more the charge that vocational programs provided training for nonexistent jobs, the Amendments also specified in greater detail requirements for evaluations.

In and around the developments within vocational education itself during the 1960's and 1970's has come a new form of vocationalism: career education.[8] In many ways, career education has also seemed like a criticism and rejuvenation of vocational education, attacking the schools for their continued irrelevance and urging them to measure every effort against the canon of usefulness. Self-consciously subsuming vocational education within it, career education at its most grandiose tackles every kind of economic, educational, and social ill mentioned in the past two decades. Yet the claims are still familiar from vocational education, and most of them date back to the Progressive Era and before. The insistence that career education can solve the "mismatch of workers and jobs" and thereby reduce unemployment and employment bottlenecks, that it can motivate workers by giving them a better understanding of their jobs, and that it can upgrade the status of manual labor which requires lower levels of schooling is familiar from various stages of the vocational education movement. The claims that career education can solve some of the pressing problems of education--including the sense of the irrelevance of schooling, the persistent problem of dropouts and "undereducated" youth, and the new problem of "overeducated" youth--are familiar from previous generations of educators who have espoused vocational education.[9] And the advocacy of career education, or some program which integrates school and work, by a variety of groups worried about the "youth problems" of alienation from school, poor mental health, and increasing rates of juvenile delinquency recalls the promise that vocational education could eliminate the "wasted years" syndrome and ease the transition from adolescence to adulthood.[10]

Implications for Evaluation

By now it should be clear that the claims made on behalf of vocational education, the arguments that proved politically persuasive, have displayed a remarkable similarity over the past hundred years. While some commentators have stressed the special role of the Vocational Education Act of 1963 in reorienting vocational education from narrowly defined skill training to more general training and to a concern with minorities and others who are "educationally disadvantaged," in fact neither of these ideas were new. A concern that vocational programs not give excessive attention to specific skills existed in the Progressive Era, as did a desire to have such programs serve to integrate immigrants and black migrants into the existing school systems and then into the system of industrial production unfamiliar to them. And conversely, specific-skill training has been diminished more in rhetoric than in practice, as the continuing efforts to broaden the scope of vocational education attest.

To summarize the historical record, there are four historical continuities in the kinds of claims that, with minor variations, have been made on behalf of the different forms of vocationalism. The first is the use of vocational education to integrate various groups into the schools and then into the economy--immigrants and migrant blacks in the Progressive Era, minorities in the 1960's, minorities, women, and bilingual groups in the 1970's. What such integration means, however, has varied depending on one's vantage. Historically, lower-class, minority, and immigrant children have been viewed as different in their capacities to absorb education and in the kinds of occupations they would be likely to follow (their "evident and probable destinies"), different from the white and middle-class children who had dominated the upper levels of the public schools until the Progressive Era. Thus vocational courses provided a way of including these "different" children within the public schools while maintaining a distinction between the "masses" and the "classes." The continuous criticism that vocational education has created a dual school system reflects the fear of this kind of stratification. But a somewhat different concept of integration has always existed, made explicit in the 1963 Act. Under the assumption that vocational education does confer some advantages (at least relative to the basic education track), it can be used to enhance the economic position of minorities, women, and others who have suffered discrimination in schools and in the labor market. But emphasizing vocational education for those termed disadvantaged is evidently double-edged: If there is, in fact, a positive return to vocational education, then such an emphasis may be justifiable; but if the return is nonexistent or even negative, then evidently vocational education amounts to a mechanism of stratification, keeping minorities and lower-class youth out of the curricula, generally the college-bound track, where there is any real advantage.

208

A second historical claim that continues to be made for vocational education is that it can help solve certain economic problems. In particular, the problems most urgent since the 1930's have been related to unemployment and underemployment, including the Depression, the presumed technological unemployment of the 1960's, the high rates of unemployment of the 1970's, and the special matter of youth unemployment. Even during the Progressive Era, the focus on the unemployment rates of the unskilled was as important a concern as the desire of employers for more highly skilled labor. Thus, the claim that vocational education can "match workers to jobs" has promised to relieve employment bottlenecks and, particularly in career education, to improve the efficiency of the labor market by improving the quality of the information which prospective workers have.

Third, vocational education has consistently been promoted to resolve some of the problems internal to schools, especially to deny the criticism that schools have somehow become irrelevant or useless. The way in which vocational education could establish the legitimacy of the schools has not always been clear, but most concretely educators have always hoped that vocational education would reduce the most palpable indications of the irrelevance of schooling--high dropout rates and evidence of student boredom and alienation. The career-education movement has added the further goal of reducing "overeducation" (high rates of college attendance despite evidence of a declining rate of return from college).

Finally, vocational education has been consistently advocated for its presumed ability to deal with social problems. The social pathologies which have been mentioned in the claims for vocationalism vary tremendously, from crime to poverty, from the disintegration of American society to the decay of the cities. But the most common focus of those promoting a closer connection between school and work has been the complex of problems now thought of as the "youth problem" (earlier, the "wasted years syndrome"), i.e., the difficult period of transition between school and adolescence to work and adult responsibilities along with the range of social pathologies associated with this period, like juvenile delinquency, teenage pregnancy, poor mental health among adolescents, poor attachment to the labor force, and the tendency for many young people not in school to drift among dead-end jobs in the process of looking for more stable employment.

At the same time that these four claims for vocational education have persisted, a number of criticisms have dominated the periodic reevaluations. First and foremost has been the contention that vocational education is used to stratify the school system, to separate lower-class and minority youth from their white, middle-class peers. Second has been the continuing suspicion that vocational education has no real economic value, that it provides no long-term advantage in the labor market. Finally, there has been a constant battle over the skills to be taught in vocational curricula, whether these should be relatively specific or relatively general. In the more obviously political battles of the Progressive Era, the interests of labor were allied with more general skills, while businessmen pressed for more specific skill training. Since then the conventional wisdom has been to espouse more general training in order to provide the kinds of skills that can be readily transferred among occupations in an economy that is constantly transforming itself and changing the occupations which are in demand. But the necessity to constantly reaffirm the need for more general training--in the 1963 Act, the 1968 Amendments, and the career education movement--indicates that in practice training tends more to the specific.

I contend, then, that these claims and criticisms form the core of vocationalism as it has manifested itself in many forms, and that they are important components of vocational education no matter what the stated intent of a program might be.[11] They suggest four priorities in the evaluation of vocational education, along with a number of unanswered questions about the nature of skill training which I will develop in the third section.

Stratification. First and foremost, vocational programs should be evaluated for their tendency to segregate lower-class and minority youth into tracks that are not only distinctly different from those attended by white and middle-class youth but have worse prospects for future success. A similar tendency to track women into curricula that are sex-stereotyped, as noted in the 1976 Amendments, should be of equal concern. But the problem of stratification by class, race, and sex is more subtle than evaluators have so far realized; indeed, the phenomenon of stratification is bound up with the economic returns to vocational education. It is insufficient to know, for example, the representation of minority and working-class youth in a particular program;[12] it is also necessary to know whether that program has high or low economic returns relative to the alternatives immediately available.

The subleties of tracking mechanisms and the difficulties of curriculum labels have been heightened by the existence of a basic education track, usually considered to be of lower status than vocational curricula, but which, in light of the indication that the return to vocational education is often nonexistent, is not necessarily inferior. There are always at least three tracks to consider: the academic track, where students have a reasonable chance of continuing to college, the vocational track, and the basic education--and all of them must be evaluated in terms of their economic returns. An overrepresentation of black students, for example, in a vocational program with zero returns compared to the basic track would be evidence of stratification, compared to the situation where the vocational program has a positive return over the basic track and the academic program is

210

itself mislabeled because it fails to send any of its students on to college. Similarly, an overrepresentation of blacks in a vocational program when an available academic program has substantially higher returns may indicate that blacks are being tracked out of the academic program. Evaluating whether vocational programs segregate different kinds of pupils is therefore a relatively complex task. But it should be clear that it cannot be accomplished without simultaneously investigating the returns to different programs and the alternatives immediately available to students, as well as the characteristics of pupils in different programs.

Economic return. Evidently, the historically continuous anxiety over the economic value of vocational education requires a continued investigation of its economic return compared with other curricula. As has often been noted in reviews of evaluations, the methodologies used in the past have usually been poor. The state of the art is now improving rapidly, particularly with the availability of longitudinal data sets and an appreciation of the subtleties of controlling for variables other than curriculum. Some studies have analyzed dependent variables other than earnings, and in view of the historically persistent claim that vocational programs can reduce the amount of unemployment an individual experiences, this should continue to be an independent variable of the greatest importance in future evaluations.

If the evaluation of vocational programs can bear an additional complexity, it would be fruitful, in light of the questions raised in the following section of the paper, to investigate economic returns for different kinds of vocational programs, rather than the conventional manner of treating all vocational courses as equivalent. For example, do programs for airplane mechanics consistently have high returns while programs in distributive education have consistently zero returns? Although the results of such analyses could be variously interpreted, they would be helpful in indicating what kinds of job-related skills can be profitably taught in vocational programs and what kinds of jobs seem to require skills more readily developed in other settings.

Employment rates. In view of the historical concern with unemployment and the value that a closer relationship between school and work might have in reducing certain kinds of unemployment, the overall employment effects of vocational programs should receive closer attention. Evaluating the effect of different curricula on samples of individuals addresses this same issue in part, because if there is no significant impact of vocational programs on individual unemployment experiences, as several researchers have found, then there can be no aggregate effect on unemployment rates. But such investigations are not necessarily sufficient, because the finding that a vocational program reduces the incidence of unemployment for those in the program does not rule out the possibility that others have experienced more unemployment as a result. As will be clarified in the following section, to the

211

extent that the demand for labor is price inelastic, then there can be no reduction of aggregate unemployment through vocational programs; any reductions in unemployment must come at the expense of other workers. The methods for examining the aggregate employment effects of vocational programs have not yet been developed, but efforts to examine similar programs concerned with training—manpower programs in particular—should be relevant.

Social benefits. It seems worth trying to evaluate the persistent claims that vocational education can resolve certain kinds of social problems. If we take seriously the promise that vocational education and career education can smooth the transition from school to work and thereby alleviate some of the difficulties associated with the "youth problem," then one way to evaluate this historical claim is to investigate whether this transition is in fact smoother for students from vocational education programs than for others. That is, such an investigation might be an appropriate proxy for examining the other kinds of social benefits which at various times have been claimed for vocational education. Among the issues that ought to be analyzed are whether initial periods of unemployment before obtaining a first job are shorter for vocational education students, whether spells of unemployment are less numerous and shorter the first few years, whether job changes are less frequent, and whether the amount of job search among "dead-end" jobs or jobs unrelated to the course of training are less frequent.

Specific and General Skills: Unresolved Issues[13]

Vocationalism in every one of its manifestations has stressed the "integration of school and work," but it is not always clear what this means, except at the level of rhetoric. Functionally, it appears to mean that every vocational graduate should get a job in the area he or she was trained for, and conversely, that there should never exist skill bottlenecks (as noted earlier, situations where some are unemployed while there are openings in occupations requiring different skills). In practice, vocational education seems to do rather poorly when measured against these criteria: most studies have found rather low percentages of vocational education students in the areas they were trained for, and there have been no real attempts to investigate the extent to which vocational education reduces skill bottlenecks.

Yet there has never been much discussion of what kinds of skills are required in the working world that can be readily taught in a school situation. The debate within vocational education has been over general and specific skills, though these have been defined only rarely. The common use of the words indicates that a specific skill is one which is utilized in only one narrowly defined occupation, while more general skills are those which can be utilized in several different occupations. The call for more general skill training has been based on the notion that our economy changes so rapidly and occupations wax and wane so frequently that specific-skill training is likely to leave an individual without any saleable skill. The pressure within vocational education has always been toward more general skill training, though in practice, as the evaluations indicate, this has been passed over in favor of rather specific skill training.

There is, however, a slightly different conception of specific and general skills which has become common in economics. As developed by Gary Becker in particular, specific skills are those which are useful to only one employer;[14] an extreme example is the kind of skill needed by the taster at the Hershey's chocolate factory. General skills are those (like literacy) that every employer uses. The important difference, in the human capital version, is that an individual will never invest in specific-skill training because the scope for its utilization is too narrow; the employer must provide the training and can recoup the investment through the higher productivity of workers with specific skills. The employer need not pay such workers higher wages than those prevailing for unskilled laborers, since the specific skills are useless to any other firm, and there is no incentive for other employers to bid such workers away. In the case of general skills, however, any employer who provides general-skill training will find other employers ready to pay higher wages for trained workers. As a rule, the wages for generally trained workers must be higher than those for untrained workers, but the workers themselves must invest in the training since it will never pay for a firm to do so. These present extreme cases, of course, and in practice skills will vary on a continuum from perfectly general to perfectly specific.

The implications for vocational education programs can be outlined with a simple analysis of supply and demand. Consider first the case of the demand for a certain kind of labor by an individual firm and the supply of labor to that firm (S and D in Figure 1). If the skill

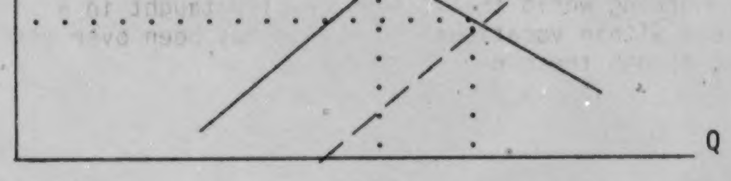

Fig. 1. Relationship between supply and demand of workers in a specific skill, elastic-demand situation. S' equals supply of workers after introduction of a specific-skill vocational education program.

213

required in that kind of work is perfectly specific, in the Becker sense, then the introduction of a vocational education program for that skill will increase the supply of workers to that employer (to S'), while the demand will stay the same. In this case, the amount of employment will increase, but wages will decrease; the amount of surplus ("consumer's surplus") captured by the employer will increase, while the surplus to workers will decrease. The change in the total wage bill will in general depend on the elasticities of demand and supply and on the size of the vocational program--that is, on the magnitude of the shift in the supply curve. In the case of specific training, the benefits of the vocational program are distributed peculiarly: while there is increased employment, it comes at the expense of decreased wages, and employers capture most of the benefits of the program. It is doubtful that public subsidies could be justified in this situation.

In the case of general skills, however, the introduction of a vocational program will have somewhat different effects. The productivity of generally trained workers will be increased, and in fact the employer who wishes to hire such workers must increase wages to prevent other firms from capturing them; thus, the demand curve shifts upward (to D' in Figure 2). The supply of labor to the firm will increase somewhat, but only slightly, since in the case of perfectly general skills vocational education pupils will find their skills in demand by every other firm; the shift out in the supply curve is smaller than in the case of specific skills. Evidently, from Figure 2, there is an increase in the wage and in employment levels; the surplus that goes to workers has increased, while the change in the surplus to the employer depends on a variety of factors and in general one cannot tell whether it increases or decreases (though any change would probably be rather small). Thus, the distribution of benefits differs greatly from that associated with specific skills; workers gain in every sense, and the impact on employers is in all likelihood small.

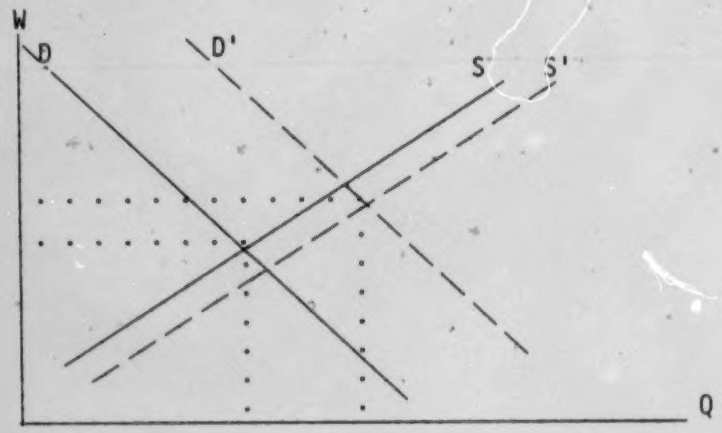

Fig. 2. Relationship between supply (S) and demand (D) of workers in a general-skill, elastic-demand situation. S' and D' equal supply of and demand for workers after introduction of a general-skill vocational education program.

Some of the conclusions change critically, however, as the demand for labor becomes less elastic. This would be true, for example, in the case where there is no possibility for increased production and thus no incentive to increase the labor force (and production) in the event of a fall in the wage rate, or where there is no substitutability between labor and other inputs (as in a fixed-coefficients model). The assumption of inelastic demand is also similar in spirit to Thurow's job-competition model, where the number of jobs are fixed and workers compete for positions in a queue to gain access to jobs, rather than competing on the basis of wages.[15] A complete model necessary here would require the inclusion of product demand, the nature of the production function and the substitutability among inputs, the degree of monopoly and monopsony power, unionization, and other such factors. As Figure 3 indicates, in the case of specific skills, inelastic demand implies that not even employment is increased. In the case of general skills with inelastic demand, in Figure 4, the upward shift in the demand curve has no effect, and the benefits which would accrue to workers in the usual case of general skills would disappear.

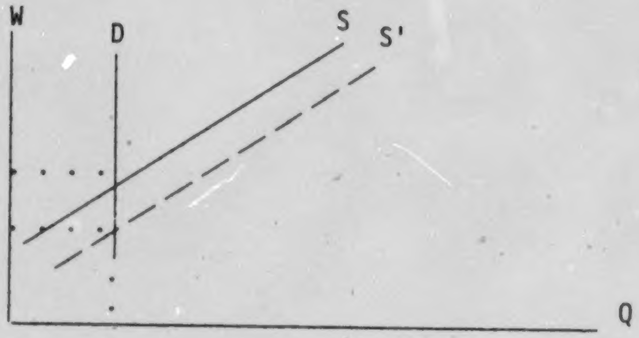

Fig. 3. Relationship between supply (S) and demand (D) of workers in a specific-skill inelastic-demand situation. S' equals supply of workers after introduction of a specific-skill vocational education program.

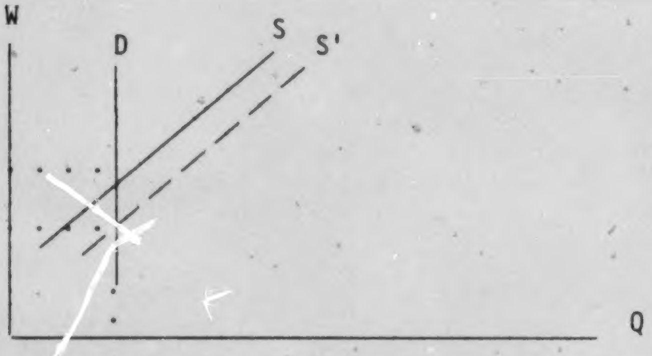

Fig. 4. Relationship between supply (S) and demand (D) of workers in a general-skill inelastic-demand situation. S' equals supply of workers after introduction of a general-skill vocational education program.

This simple analysis clarifies the importance of both the degree to which a skill is general or specific and the elasticity of demand. There are a number of further implications for evaluations of vocational education as they have been carried out in the past. First, the absence of any effect of a vocational program on the wages of its graduates is not necessarily an indication that the program has been ineffective. It may be instead, as in Figure 1, that the training has been specific and that the benefits have been captured by firms instead of workers. Second, it is possible in the case of a skill with an important general component to have distinct benefits, but for there to be no increase in the wage rate; this would happen when both the demand curve shifted up and the supply increased as well. Thus, because the wage is a result of both demand and supply, it is generally impossible to know whether the absence of any wage effect from a vocational program means that it is truly ineffective or whether it is effective but firms are capturing the benefits of specific skills.

Similarly, the employment effects of vocational programs depend on the elasticity of demand and the degree to which a skill taught is general or specific. From Figure 1, it is possible (at least when the demand is elastic) for employment to expand--that is, for there to be a relatively good chance for graduates of a vocational program to be employed in the occupation they were prepared for-yet for workers as a group to lose, in terms of the aggregate wage bill and the amount of surplus going to workers. One implication is that, since wage and employment need not move together as a consequence of a vocational program, it is important to investigate both wage and employment effects simultaneously in evaluating vocational education programs.

If the historical criticisms of vocational education are accurate, too many programs pass on specific rather than general skills--despite the constant efforts of legislation to encourage more general skill training. Figures 1 and 2 may indicate why: both specific and general skills training may have substantial employment effects, but the employment associated with general training is not necessarily confined to particular occupations. This frames the dilemma of vocational education: specific skills are clearly distinguishable from the skills taught in the academic programs of schools, and when they result in employment the link between work and school is clear and unambiguous. General skills, on the other hand, are likely to be less distinguishable from the academic program (even as they are defined within the context of vocational education). When they result in increased employment, the relationship between school and work is unclear, and graduates from such programs may well find jobs in areas which appear unrelated to the field of their training. Thus, vocational education has always been pressed toward more specific skill training, both to distinguish what it does from the academic program and to establish the least ambiguous relationship between training and subsequent employment.[16] Yet the paradox is that specific skills are precisely those least likely to be rewarded in terms of higher wages. Perhaps most telling of all, specific skills may be less amenable to being taught in classroom and school settings and may be more efficiently taught through on-the-job training, work-experience programs, apprenticeship programs, and the like, while the real advantage of school settings comes in teaching more general skills. If this hypothesis is correct, it explains the historical ineffectiveness of vocational education: it attempts to do what schools do worst.

These admittedly sketchy comments on specific and general skills are intended to illustrate the importance of a systematic investigation. Given the historical persistence of questions about the proper balance of specific and general skills within vocational education, the reluctance of vocational educators to abandon specific-skill training, and the lack of any attention to what kinds of skills are most effectively passed on in school settings, it seems necessary for any serious program of evaluation to address the issues of specific and general skills.

Persistence of Vocational Education

In the past, the important evaluations of vocational education have been consistent in criticizing its failings, often quite harshly. But they have been equally consistent in reaffirming the value of vocational education. The result has been the legislative and political renewal of vocational education--in the legislation of 1963, 1968, and 1976, and in the career-education movement. This raises the question of why vocational education continues to be proposed as a solution to a variety of social and educational problems despite its evident weaknesses. For the future, it raises the issue of what role evaluations of vocational education do serve (or can serve) and whether in some sense evaluations have been irrelevant to the development of vocational education.

The first answer to the question of why vocational education is so resilient is that, in periods of apparent crisis, Americans have shown a strong tendency to turn to the schools for solutions, and vocational education has been consistently an element in this approach to reform. This is essentially a conservative strategy: by promising solutions through the schools, more fundamental reforms, particularly in the basic economic and political institutions of our country, can be effectively postponed. The conservative implications of vocational education are clear: in a period of high and apparently insoluble unemployment, the promise that vocational education can help correct the "mismatch" between workers and jobs promises a solution (as did the manpower programs which proliferated in the 1960's), directing attention away from the structural inability of late capitalism to provide enough employment.

A second answer is that vocationalism has always promised to help resolve a variety of economic, social, and educational problems, all at the same time. Its appeal has always been widespread, and this has obviously helped provide a strong political base. Ever since labor decided to support vocational education, its opponents have been few and relatively weak. At most, politically powerful groups appear to be indifferent to vocational programs rather than actively opposed to them.[17]

Finally, and perhaps most powerfully, vocational education has a simple appeal that obviously extends far beyond vocational educators themselves. In a society where work and productivity is so crucial to an individual's sense of accomplishment, it is immediately appealing to turn to work and work experiences as the appropriate way to socialize the young. This aspect of vocational education speaks, of course, to our most positive images of work, indeed to the assumption that work is a fundamental expression of human nature.[18] But vocational education is caught in a contradiction, because while work and productivity in the abstract may be fundamental in American society, work as it is actually available to most Americans has a rather negative reality, inspiring at best a passive acceptance and at worst active hostility.[19] This has been particularly true for vocational education, which has prepared individuals almost exclusively for working-class jobs, rather than for the professional and managerial jobs which are the most rewarding. The reality of work and our ideals of what work ought to be usually conflict, and the simple appeal of vocational education ends up foundering on this contradiction.

Whatever the superficial appeal of vocational education has been, vocational movements have been responses to several different kinds of emerging contradictions within the public schools.[20] In the first place, vocational movements have succeeded in restratifying the public schools by class and race, during periods when stratification mechanisms were weakening. During the Progressive Era the growth of the high school meant that the "masses" and the "classes" were mingling, and vocational education provided the basis for curriculum and classroom differentiation which restored a stratified school system. Similarly, the growth of higher education after World War II threatened to make colleges more heterogeneous; the development of two-year colleges, particularly with a vocational focus, provided a mechanism for the stratification of higher education.[21] More generally, there has always been a tension between the role of the schools in reproducing class and racial status from one generation to the next and in preparing students for a labor market characterized by large amounts of inequality in the status and rewards of different jobs, and its role in promoting equality of opportunity. This tension has taken rather obvious and increasingly strident forms in the past two decades, in battles over integration and busing, community control, school-finance controversies, compensatory education, open enrollment, and preferential admissions. Vocational education (along with career education) has promised to alleviate these tensions, by providing a mechanism and rationale for stratifying the schools in a way that appears to be legitimate, because of the promise of a substantial payoff to vocational education. But, as I noted earlier, if that payoff fails to materialize, then vocational education amounts only to a mechanism of stratification.

Second, vocational education has continuously restated a particular model of the role of the schools, an image of work, and the relation between school and work. In arguing that school as well as schooling should be "relevent," vocational education has also posited a particular criterion of relevance: schools should be useful in terms of the cognitive skills and personal characteristics required in the labor market.[22] To be sure, the image of work embodied in vocational education has often become outmoded and has required periodic refurbishing: the dominance of trade and industrial education from the Progressive Era became anachronistic with the expansion of various forms of white-collar and service work, and the continual broadening of vocational education and of career education can be seen as a way of stating a more appropriate image of work. But despite some confusion about what work is like, the goals of education are clear enough. The view embodied in vocational education is distinctly different from the view that sees education as developing every aspect of human potential, including critical facilities and capacities for self-motivated activities. This rather different conception, associated particularly with John Dewey and progressivism in this country, has often been suspected of creating dissatisfied, unruly workers, disrespectful of authority, and of encouraging educational "frills"--art, music, and (in the words of Jerry Brown) macrame. During those periods when the schools have threatened to become "useless," vocationalism has been ready to reassert a particular model in which all of schooling is evaluated by its contributions to an economic system which itself is beyond criticism.

The reasons that vocational education continues to be promoted despite persistent criticisms, and the functions it has historically played in the schools, are political: they have consequences for individuals of different class and racial backgrounds and for women; they embody values and attitudes toward the nature of work under advanced capitalism and values about what the role of the schools should be in a class society. This is at least one of the reasons why the evaluations of vocational education in the past have not led to weakening support: decisions about vocational education are in part political and value-laden, and as such are less likely to be altered by the kinds of technical information available from evaluations. In formulating a program of evaluation, it seems to me necessary to consider the political dimension of vocational education explicitly, to judge what the role of evaluation can be in a political context. Otherwise, the cycle of criticism and reaffirmation which has characterized vocational education's history will continue to be repeated, and that outcome should satisfy no one.

NOTES

[1] On the history of vocational education, see the Introduction in Marvin Lazerson and W. Norton Grubb, American Education and Vocationalism: A Documentary History, 1870-1970 (New York: Teachers College Press, 1974). We have updated this history to include career education in "Rally 'Round the Workplace: Continuities and Fallacies in Career Education," Harvard Educational Review, November 1975, 45pp. While the roots of vocational education extend farther back to the manual-training movement of the 1880's, any discussion of manual training would essentially duplicate material drawn from the Progressive Era.

[2] John Russell and Associates, Vocational Education, prepared for the Advisory Committee on Education, Staff Study No.8 (Washington, D.C., 1938).

[3] See the U.S. Office of Education, Life Adjustment for Every Youth, Bulletin No. 22, 1951. A major indictment of Life Adjustment is Arthur Bestor, Educational Wastelands (Urbana: University of Illinois Press, 1953).

[4] Panel of Consultants on Vocational Education, Education for a Changing World of Work (Washington, D.C., 1963).

[5] Advisory Commission on Vocational Education, Vocational Education: The Bridge between Man and His Work (Washington, D.C., 1968). See also Garth Mangum, Reorienting Vocational Education, Policy Papers in Human Resources and Industrial Relations, No. 7, Institute of Labor and Industrial Relations, University of Michigan, 1968.

[6] U.S. Comptroller General, What Is the Role of Federal Assistance for Vocational Education? (Washington, D.C., U.S. General Accounting Office, December 31, 1974).

[7] The reviews of vocational education evaluations at best show mixed results, with some studies indicating positive returns from vocational education and some showing nonexistent or even negative returns. The studies are generally flawed, however, and the best of them--like those based on the National Longitudinal Study --show no real benefit. For reviews, see Beatrice Reubens, "Vocational Education for All in High School?" in James O'Toole, Work and the Quality of Life (Cambridge: MIT Press, 1974); Ernst Stromsdorfer, "The Methodology of Cost-Effectiveness Analysis and a Critique of the Methodology of Major Studies with Illustrations," as summarized in Chapter 6 and appendix tables of Leonard Lecht, Evaluating Vocational Education: Policies and Plans for the 1970's (New York: Praeger, 1974); and Appendix A of Assessing Vocational Education Research and Development,

Committee on Vocational Education Research and Development, National Academy of Sciences (Washington, D.C., 1976).

[8] The contention of Marvin Lazerson and myself that career education is an extension and elaboration of vocationalism, rather than something entirely new, has not been accepted by career educators themselves, though other observers seem to have recognized this. See, for example, the correspondence relating to "Rally 'Round the Workplace," in the Harvard Educational Review, May and November 1976.

[9] The most inflated claims for career education have been made by Sidney Marland and those who have followed his lead; see, for example, his Career Education: A Proposal for Reform (New York: McGraw Hill, 1974). Others have been more modest in their claims. In the work of Kenneth Hoyt and the Office of Career Education, there is a tendency to downplay some of the economic effects of career education, and instead the goals for career education appear to be a catalogue of all-purpose reforms for the public schools. See, for example, An Introduction to Career Education (Washington, D.C., 1975).

[10] These include the Kettering Report and report known as Coleman II: National Commission on the Reform of Secondary Education, The Reform of Secondary Education (New York: McGraw-Hill, 1973); Panel on Youth, Youth: Transition to Adulthood (Chicago: University of Chicago Press, 1974). Even the authors of the HEW report Work in America, having documented the adverse effects of work, recommended that schools simulate work environments and expand continuing-education programs so as to draw school and work closer together.

[11] For example, career education has been notably slippery in defining its purposes; see, for example, Marland's Career Education, Chapters 6 and 7, in which he adamantly refuses to define what career education is. Thus, when faced with the possibility that career education may not pay off in terms of earnings, he can claim (as in Chapter 3) that one of the purposes of career education is to prepare the student for civic and cultural activities. I will have more to say about this tendency within career education to promote very general and nonwork related goals in the third section.

[12] See, for example, the section of "Characteristics of Students" in Appendix A of Assessing Vocational Education Research and Development, and Chapter 2 of Leonard Lecht, Evaluating Vocational Education.

[13] This section is preliminary in the extreme; it is intended to outline a set of issues which, to my knowledge, have never been seriously addressed in connection with vocational education and merit a more complete examination than I have been able to give them here.

[14] Gary Becker, Human Capital (New York: Columbia University Press, 1964). See also Walter Oi, "Labor as a Quasi-Fixed Factor," Journal of Political Economy, December 1962.

[15] Lester Thurow and Robert F.B. Lucas, "The American Distribution of Income: A Structural Problem," Joint Economic Committee, March 17, 1972.

[16] As evidence, the two vocational movements which have been the most general in their focus--the manual-training movement and Life Adjustment Education--have failed precisely because they have come to seem irrelevant. There is within career education the same tendency to become general, and in fact this may dilute whatever appeal career education may have, as the concept of career education loses clarity.

[17] In the case of career education, see Eleanor Farrer McGowan and David Cohen "'Career Education': Reforming School through Work," The Public Interest, Winter 1977.

[18] "Arbeiten und leiben ," as Freud said. For the positive view of work, see the HEW Report, Work in America, Chapter 1.

[19] For the negative aspect of work, see Grubb and Lazerson, "Rally 'Round the Workplace." An insight into the role work plays in a society can be gained from comparing school and work in China; see our footnote 50.

[20] Work being developed by Henry Levin, Martin Carnoy, and the Center for Economic Studies has been helpful in formulating this last section.

[21] See Jerome Karabel, "Community Colleges and Social Stratification," Harvard Educational Review, November 1972.

[22] The same process of affirming the "usefulness" of education has occurred in the university as well as at the elementary, secondary, and junior college levels. Though my knowledge of this history is rudimentary, at least two periods in which higher education has been called upon to be more "relevant" to future employment were the period just before 1900, and now in the 1970's with the increasingly professional emphasis of college students. The point is that the particular concept of "relevance" embodied in vocational education has been true within the university as well, although the similarity has never been too apparent because of differences in class positions for which the two prepared students and because the cultural apparatus of the university is so much stronger.

THE EFFECTS OF NATIONAL POLICY ON VOCATIONAL EDUCATION EVALUATION

Thomas M. Bogetich, Norma Phillips Lammers

Evaluation of Data Collection and Analysis in Vocational Education: The Current Perspective

The 1968 Amendments (P.L. 90-576) to the Vocational Education Act of 1963 provided very limited evaluation policy. The 1968 Act made available categorical funding for vocational education programs, services, and activities including support to specific target populations. The Act represented a major departure from federal policy, which had not changed significantly from 1917.

A major feature of the Act was the establishment of state and national advisory councils on vocational education to assist in the planning and evaluation of vocational education. It apparently was the intent of Congress to rely on these councils for the evaluation of the use of federal funds in vocational education. The U.S. Commissioner of Education was given little direction in the Act relative to evaluation. Section 123(a) (17), for example, indicates that the Commissioner is to determine evaluation requirements and reports necessary to carry out his function, including keeping such records as to assure the correctness and verification of such reports.

Section 122(a) provided that funds could be utilized for the evaluation of vocational programs without any specific reference to expected outcomes. The only item in this section that hinted toward expected outcomes was the following:

> ...and improved state administration and leadership, including periodic evaluation of state and local vocational education programs in light of information regarding current and projected manpower needs and job opportunities (122(a) (8)).

A noble but weak effort was made in Section 123(a) (8) to effect a cooperative arrangement between state educational and public-employment service agencies to generate a supply-and-demand information base. In order to support this charge, Section 103(a) (1) provided an annual authorization of $5,000,000 to be transferred to the Secretary of Labor from the U.S. Commissioner of Education to finance national, regional,

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state, and local studies and projections of manpower needs for use by federal, state, and local officials and advisory councils. Implementation of this proviso would have provided desperately needed baseline data required for program planning and evaluation. Unfortunately, the U.S. Commissioner did not provide these funds to the Secretary of Labor and neither did Congress. Federal regulations regarding evaluation were less than adequate. Evaluation design and outcomes were left totally in the hands of state boards. Congressional needs and/or criteria were not specified. Thus, any changes in federal policy would have to be made without the benefit of evaluation data determined necessary by Congress. Section 102.4(k), for example, stated:

> Evaluation of the results of the program of instruction shall be made periodically on the state level by the State board and the State advisory council and continuously on the local level with the results being used for necessary change or improvement in the program through experimentation, curriculum development, training of vocational education personnel, or other means.

Evaluation requirements were more fully defined in Section 102.36, which charged the state board with the responsibility for program evaluation, indicated that the state board should consider evaluations conducted by state advisory councils and local educational agencies, and mandated that the state plan must describe the state's program for evaluating state and local programs, services and activities, including the frequency of such evaluations, procedures to follow, and criteria to determine effectiveness.

The very nature of P.L. 90-576 and subsequent regulations resulted in an inordinate amount of time spent by federal, state, and local agencies in meeting minimum compliance requirements while ignoring evaluation needs. Both federal and state leadership was lacking or totally ineffective, as noted in the 1974 General Accounting Office report ("Report to the Congress: What is the Role of Federal Assistance for Vocational Education?"). Local educational agencies, burdened by the complexities of categorical-funding applications and reporting, paid little or no attention to the evaluation requirements found in regulations.

As already noted, many deficiencies existed in P.L. 90-576 and subsequent regulations with regard to evaluation. More specifically, these deficiencies included the following:

1. Policy and regulations lacked specific criteria for evaluation.

2. Insufficient attention was given to the role and relationship of evaluation in the planning cycle. For example, it was virtually impossible to establish funding priorities based upon evaluation data or results. Federal policy and regulations did not provide direction other than to say: use evaluation data if available.

3. Categorical programs resulted in major emphasis being placed on development of granting mechanisms and compliance; therefore, evaluation efforts focused on administrative process rather than on the end products of vocational education.

4. Fiscal evaluation requirements were minimal; therefore even when they were done, they had virtually little effect.

5. Federal and state planning requirements provided little or no direction or incentive to establish evaluation criteria to deal with unnecessary duplication at the postsecondary-adult level. (In the writer's opinion, such a requirement would be difficult, since problems of unnecessary duplication are uniquely different in each state and in regions within states.)

6. The evaluation role of the Commissioner and his staff was not clearly defined in statute or regulation. For all practical purposes, the Commissioner abdicated his responsibilities for evaluation to state boards with little or no direction.

7. The federal compliance reporting system resulted in data that were virtually useless for evaluation purposes. Reports were often published two years after the fact and contained many gaps or incomplete information.

8. Baseline evaluation data for the purpose of establishing funding priorities at the national level could not be obtained.

9. Not all vocational education programs were required to be evaluated. Periodic evaluation was the name of the game, and that means little or none.

10. Funding methodology resulted in piecemeal evaluation efforts. Accountability reporting and evaluation were not mandated.

Prospects for the Immediate Future

P.L. 94-482, the 1976 Education Amendments, mandates new data-collection and analysis requirements for various local, state, and federal agencies involved in the vocational education delivery system.

Local educational agencies (LEA's). Section 106(a) (4) (B) (ii) requires that the state administration through the State Board of Education provide assurances that it will distribute funds on the basis of annual LEA applications that link proposed programs to previous program evaluations. This section is significant in that it requires local educational agencies to utilize evaluation results for planning, a rational but nevertheless previously ignored use of evaluation findings.

State boards and state administration. Section 104 requires that the Stae Board of Education gather, analyze, and disseminate data pertaining to the status of men and women students and employees in vocational education programs within that state (Sec. 104 (b) (1) (b)); review all vocational education programs in the state for sex bias (Sec. 104 (b) (1) (E)); and monitor the implementation of laws pertaining to sex discrimination in all personnel practices relating to state vocational education programs (Sec. 104 (b) (1) (F)). In the context of this section "monitor" and "review" imply evaluation.

The state administration is required in its annual plan and accountability report to show explicitly the extent to which goals were achieved in the previous year and to determine program effectiveness based upon evaluation findings in terms of employment criteria. Again, the significant mandate appears to be that descriptions of how evaluation results are used to improve programs must be included in the annual state plans (Sec. 108 (b) (2) (A) and (C)).

The federal criteria for evaluation of effectiveness of vocational education programs by state administrations are clearly set forth in Sec. 112 (b) (1) (B) of P.L. 94-482.

> Each State shall evaluate, by using data collected, wherever possible, by statistically valid sampling techniques, each such program within the State which purports to impart entry level job skills according to the extent to which program completer and leavers
>
> (i) find employment in occupations related to their training, and
>
> (ii) are considered by their employers to be well-trained and prepared for employment,
>
> except that in no case can pursuit of additional education or training by program completers or leavers be considered negatively in these evaluations.

The state administration is further required by this section to consult with the state advisory council on vocational education so that it may assist the state in developing and monitoring these evaluations.

Section 161 (a) (3) (B) mandates the cooperation of all states receiving Vocational Education Act (VEA) funds in supplying information requested by the Administrator of the National Center for Education Statistics. The states are additionally required to conform their reports to national data elements, definitions, and reporting formats.

State advisory councils. Section 105 requires state advisory councils to evaluate vocational education programs, services, and activities assisted by VEA funds and to publish and distribute such findings (Sec. 105 (d) (2)). Specifically, the state advisory councils must submit an annual report to the commissioner evaluating the effectiveness of vocational education programs, services, and activities in meeting program goals as set forth in the state's five-year plan, and annual plan, and accountability reports, including a review of state-board-produced program-evaluation reports and analyses of distribution of federal funds (Sec. 105 (d) (2) and (3)). This section tends to define the maximum scope of state advisory council evaluation activities, rather than set any specific minimum requirements in terms of numbers or types of programs and services to be evaluated. This leaves individual councils with the flexibility to concentrate their evaluation on one particular aspect of vocational education or to give general review to the system. One specific activity mandated for state advisory councils, however, is the assessment of the extent of coordination of vocational education, vocational rehabilitation, and employment-training programs and services (Sec. 105 (d) (4) (A)).

Federal agencies. The Commissioner is required to review and analyze each state's annual program plan and accountability report and transmit that analysis with any recommendations to the state board within four months of review (Sec. 112 (a) (1)).

The Bureau of Occupational and Adult Education (BOAE) is required under Section 112 (a) (2) to conduct a review of federally assisted vocational education in at least ten states per fiscal year, analyzing the strengths and weaknesses of such programs. Though this same section requires the Department of Health, Education, and Welfare to conduct fiscal audits of the same programs, it is still somewhat unclear whether BOAE evaluations are to be results-oriented or are simply to document what programs were provided.

For the first time, the Commissioner is required to submit to the Congress an annual report of the status of vocational education, utilizing data from national reporting systems and evaluation findings included in state plans. To ensure timeliness of the data, this report is due within nine months of the end of the fiscal year (Sec. 112).

Though Section 161 lists some basic elements to be collected, the Commissioner and the Administrator of the National Center for Educational Statistics (NCES) are to develop and define other information elements necessary to a national Vocational Education Data System (VEDS) that are compatible with the existing occupational-information data system. After completion of the developmental phases, the Administrator of NCES is mandated to design, implement, and operate the VEDS. Though the system was originally required to be fully operational by October 1, 1977, it has been postponed owing to delays (Sec. 161 (a) (3) (A)). This same section of the Act establishes the National Occupational Information Coordinating Committee and the State Occupational Information Coordinating Committee and directs them to develop their respective occupational-information systems to meet the needs of planning and administering vocational education and employment and training needs. This is a very significant section in that it provides the data base necessary for future evaluation activities.

The evaluation responsibilities of the National Advisory Council on Vocational Education (NACVE) require the Council to:

> review the administration and operation of vocational education programs under this Act, and other pertinent laws affecting vocational education and manpower training (including the effectiveness of such programs in meeting the purposes for which they are established and operated), make recommendations with respect thereto, and make annual reports of its findings and recommendations (including recommendations for changes in the provision of this Act and such other pertinent laws) to the President, Congress, Secretary, and Commissioner.

In addition, NACVE is charged with assessing the extent of articulation among vocational education, employment training, and vocational rehabilitation and communicating such findings and resultant recommendations in an annual report to the Congress, President, Secretary, and Commissioner (Sec. 162 (b)).

Under Section 171 (a) (2) (F)), funds are authorized for use by the Commissioner in support of a national research center that, as one of its charges, may provide technical assistance to states and local educational agencies in developing evaluation methods.

Evaluating the impact of bilingual vocational training is noted as an additional responsibility of both the Commissioner and the Secretary of Labor in Section 182 (a) of the Act. In Section 523(a) the Commissioner of Education also is required to evaluate the progress made in reducing sex discrimination and sex stereotyping in vocational education programs and to report these findings to Congress within two years of the date of enactment.

The most comprehensive evaluation responsibilities are conferred upon the National Institute of Education, in Section 523 (b) of the Act. The Institute is mandated to conduct a thorough evaluation and study of vocational education programs conducted under the Vocational Education Act of 1963, the CETA Act of 1973, or by the state postsecondary commissions created by the Education Amendments of 1972. The study must include:

A. a study of the distribution of vocational education funds in terms of services, occupations, target populations, enrollments, and educational and governmental levels and what such distribution should be in order to meet the greatest human resource needs for the next 10 years;

B. an examination of how to achieve compliance with, and enforcement of, the provisions of applicable laws of the United States;

C. an analysis of the means of assessing program quality and effectiveness;

D. depending on the level of funding available to the Institute, not more than three experimental studies to be administered by the Institute, in cases where the Institute determines that such experimental programs are necessary to carry out the purpose of clauses (A) through (C) and the Commissioner of Education and the Secretary of Labor are authorized, notwithstanding any provision of any other law, at the request of the Institute, to approve the use of grants which educational or other agencies are eligible to receive under such Acts (in cases where such agencies agree to the uses of such grants), in order to carry out such experimental programs;

E. findings and recommendations, including recommendations for changes in such Act or for new legislation, with respect to the matters studied under clauses (A) through (E); and

F. a review and evaluation of the effectiveness of programs funded under subpart 5 of Part A of the Vocational Education Act of 1963 (as such Act is in effect on October 1, 1977) and to make recommendations for the redirection and the improvement of programs at all levels funded under such subpart.

These requirements could potentially result in a comprehensive assessment of the process, programs, and outcomes of federally assisted vocational programs. The evaluation findings could identify key national, state, and local priorities for the Vocational Education Act of 1982. In addition, they could provide a basis for the establishment of state and local priorities by identifying areas of unmet needs.

Strengths of P.L. 94-482

P.L. 94-482, as outlined in the previous section, will make a significant positive impact on evaluation at all levels in that it:

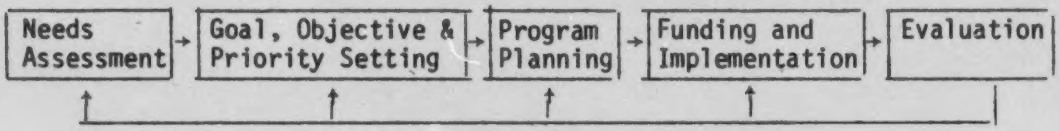
1. Sets forth some specific outcome or results criteria for evaluation of vocational education programs and services, rather than concentrating only on fiscal accountability issues.
2. Established timelines and reporting mechanisms to ensure that evaluation findings are communicated upward from local to state and national policy makers while still relatively current so that priorities can be developed and policies updated.

3. Attaches reporting and evaluation responsibilities to specific agencies or individuals, thereby ensuring their completion.

4. Places responsibility in various agencies to monitor, and review, and assess the extent of articulated planning among various vocational education, employment-training, and rehabilitation delivery systems. Such checks and balances could enhance the variety of vocational offerings by reducing duplication of services and empire-building.

5. Clearly sets forth the uses to be made of evaluation information by requiring that (a) summaries of evaluations and analyses of modifications made to proposed programs as a result of evaluation information be included in state plans and local applications and (b) funds be allocated on the basis of this linkage between evaluation and planning.

This last point deserves further explanation, since the requirement of this evaluation-planning linkage has positive implications. A rational approach for planning human services may be described as follows:


Needs Assessment
Goal, Objective & Priority Setting
Program Planning
Funding and Implementation
Evaluation

The previous awarding of federal vocational education dollars without requiring specific evaluation criteria or the use of these results in planning has led federal vocational dollars down the same path as other quick-money programs. So-called planning efforts have frequently been a matter of (a) identifying what the "feds" are funding this year; (b) adjusting descriptions of existing or porposed programs to fit these priorities; (c) creating objectives that address the priorities; and (d) elaborating on those needs that might mesh with objectives--the backwards approach to planning.

The requirements to evaluate programs and to utilize that information in planning, however, encourage agencies to go beyond mere compliance reporting. The availability of the information automatically fosters improved management decision making, informed allocation of resources, improvement of programs and services, and baseline information for setting local, state, and national priorities and policies--the systems approach to delivering vocational education. Additionally, with the government trend toward zero-based budgeting, vocational education administrators will be one step ahead with this systems approach.

Problems Associated with P.L. 94-482

Before discussing the gaps that still exist in national policy on vocational education evaluation, some attention should be given to the practical problems of implementing the evaluation requirements of the 1976 Amendments.

To date, Subpart 1 has not been funded. This would be the most appropriate fiscal resource for state and local evaluation activities. The only alternatives are to pull the monies from Subpart-3 allocation or to absorb the total cost of these new federal requirements in state and local budgets. Taking the monies from the Subpart-3 program-improvement allocation leaves little, if any, surplus to meet the original intent if that portion of the Act. Since evaluation is essentially a national priority, adequate federal funding has to be put behind it, if evaluation is to be done and done well.

The new requirement that state administration costs can only be 50 percent funded by federal dollars has had a substantial fiscal impact on state educational agencies. It can be anticipated that in many states, the staff will be decreased as a result. The increased paperwork and technical assistance required to implement the mandated evaluation activities with no additional fiscal resources make it difficult, or at least unpalatable, to comply with the requirements. In fact, if the new regulations require onsite evaluations of all vocational programs at all school sites within the five-year period, this will be impossible to achieve without very high increases in manpower. Consider California, for instance; its secondary schools have numerous vocational programs at each location, and then there are the community colleges and adult education programs. The new federal priorities cannot be realized without adequate federal dollars.

Shortcomings and Proposed Solutions

It has been assumed, throughout this paper, that the intent of Congress in P.L. 94-482 was to establish its priorities for vocational education in terms of identified needs and to require accountability from recipients of federal dollars in addressing these priorities. The evaluation components delineated by P.L. 94-482 fall short of testing the effectiveness of state and local vocational education programs in meeting federal priorities. In this section, we will point out certain shortcomings in the existing legislation and will identify possible legislative or administrative policy solutions.

Shortcoming: Failure to provide for evaluation of certain target programs. Although the 1976 Vocational Education Amendments did add two specific employment criteria to measure program effectiveness, it failed to provide criteria or sufficient specificity to measure the impact of other national priorities cited throughout P.L. 94-482. Programs for certain target populations, such as the disadvantaged, the handicapped, and limited-English-speaking/non-English-speaking persons, receive substantial attention and funding throughout the law, but no mention is made of measuring the impact or effectiveness of these target programs. Vocational guidance and counseling also receive substantial funding in the Act, but the idea of evaluating the effectiveness of supportive services is not addressed. Although assessment of the progress made in reducing sex stereotyping and sex discrimination is referred to frequently, there is no requirement to evaluate the impact of different program approaches on the desired objective.

Proposed solution. Amendments to P.L. 94-482 or future legislation could include specific evaluation criteria to measure the impact of programs addressing those national priorities cited in the Act as the basic reasons for federal allocations. Such criteria should include the extent to which target populations were able to succeed in regular programs as a result of federally assisted programs as well as measures of employment success.

Shortcoming: Failure to support coordinated interagency effort. Articulated planning delivery of services among vocational education, CETA, and vocational rehabilitaion agencies is required to be described in state plans and reviewed by advisory councils in various portions of P.L. 94-482. No separate allocations or specific exemplary or innovative program monies, however, are designated for this purpose in the Act. It would be unusual for a vocational education agency to use its federal research funds to pay the costs of CETA or vocational rehabilitation personnel to demonstrate coordinated employment and training services. Since this national priority has strong cost-benefit implications through reducing duplication of services, specific research projects should be funded at the national level to encourage crossing agency lines at the state and local level.

Proposed solution. An amendment could be made to P.L. 94-482, Section 523, directing the National Institute of Education to conduct experimental studies in articulated planning and delivery of vocational training, placement, and counseling services with several different agencies. Additionally, the new CETA legislation under development should require the CETA council to produce annual evaluation reports, using criteria comparable to those of vocational education.

Shortcoming: Failure to simplify evaluation requirements. The reporting and evaluation requirements have already become so complex that state and local educational agencies may have to refuse federal VEA dollars because they cannot accomodate the increased paper work and technical assistance burdens.

Proposed solutions. One obvious solution is to increase the federal dollars behind the evaluation activities. When the data elements and definitions for the Vocational Education Data System are agreed upon, monies should be forwarded to states and local educational agencies to enable them to fulfill their obligations.

Off-site rather than on-site evaluations could make the evaluation of all programs a more realistic task for the states.

Evaluation instruments could be developed at the national level, on the basis of state and local input, to reduce the costs associated with developing these forms. This would have an additional payoff of data comparability among states--a necessity if the evaluation findings are to be analyzed or utilized at the national level.

Serious consideration should be given to sampling programs for evaluation. The design of the evaluation and the selection of the sample could be performed at the national level through the Vocational Education Data System. If one is dealing with a reasonable sampling of programs, rather than all programs, a more comprehensive evaluation of the progress toward all national priorities could be carried out; and it could be carried out by NIE.

Shortcoming: Failure to provide for evaluation of advisory-council effectiveness. No criteria currently exist to measure the impact of state and national advisory councils, a federal innovation receiving substantial funding. States are only required to make comments to their advisory council regarding any recommendations made in their annual reports or other evaluation reports. No further analysis or accountability is required.

Proposed solution. States should be required to include, in their annual plans and accountability reports, an analysis of those changes that have been made in policy or practices as a result of advisory-council recommendations.

Shortcoming: Failure to evaluate effect of funding change. P.L. 94-482 represented a shift from categorical funding to a block-grant funding mechanism. No mention is made anywhere in the Act of assessing the positive and negative effects of this shift.

Proposed solution. The National Institute of Education could be authorized to evaluate the impact of this change. The study should include an analysis of the changes that occurred, areas that were improved, programs that had to be deleted. The end result should be information about the effectiveness of the block-grant approach and about transitional difficulties incurred. Before another radical shift occurs in any 1982 policies, it would be extremely important to know whether immediate or phased-in policy changes are more effective.

Shortcoming: Failure to set national evaluation standards. Evaluation findings should influence national policies, practices, and programs set forth in legislation. But no national-level five-year goals or objectives were set forth in P.L. 94-482. The only effectiveness criteria set forth in the law relate to employment, even though the Act states that vocational education programs are in part designed to assist students to stay in school and aid them in making occupational choices. With mostly quantitative data coming in and employment criteria being the sole effectiveness measure, what information will be available to set national priorities in 1982 legislation?

Proposed solution. National standards or criteria shoud be set, instruments developed and evaluations conducted to assess the impact of programs assisted under the Act in meeting the intent of the Act. Uniform measurement instruments or designs will provide comparability and compatability of data from the fifty states in all national priority areas, including target populations and sex-stereotyping. The results of these evaluations should be used to design 1982 legislation and to allocate resources.

Shortcoming: Failure to provide for reports back to state and local levels. Even if adequate funding is provided to state and local educational agencies to support data collection and evaluation activities, the accuracy of the data may be questionable since the data flow is totally upward. Results are not funneled back to state and local administrators, so there is no incentive for reliability.

Proposed solution. The Vocational Education Data System could provide reports back to states summarizing progress made by that state in comparison to the national picture. Such information can provide incentives for states to improve programs as well as to provide complete and accurate information.

The authors feel that adoption and implementation of the preceding proposed legislative and administrative solutions would lead to a comprehensive and dynamic evaluation system that would provide accountability for vocational education and strong baseline data for establishing future national priorities.

VOCATIONAL EDUCATION:

EDUCATION OR SHORT-RUN TRAINING PROGRAM?

John Walsh

Introduction

Since the passage of the Vocational Education Act of 1963, an Act which was intended to expand, improve, and generally revitalize the nation's system of vocational education, evaluation has become a topic of concern to vocational educators and policy makers at the national, state, and local levels. Considerable federal and state resources have been spent on assessments of programs mandated by the Act and its subsequent amendments and of vocational education in general. State plans, required by the Act and prepared according to federal guidelines, are on file in the Office of Education, management information systems have been installed at both the federal and state levels, and a small library could be stocked with "assessments" of vocational education programs conducted since 1963. Despite this activity, evidence regarding the overall effectiveness of vocational education as a system, and the relative success of specific programs mandated by the 1963 Act and its amendments, is at best ambiguous and at worst nonexistent.

It is perhaps for this reason that the 1976 amendments to the Act (Public Law 94-482) put even greater emphasis on program evaluation, and spell out more precisely than ever before the specific types of evaluative activities that are to be conducted. The Act calls for evaluations by states, advisory councils, and agencies, including the Bureau of Occupational and Adult Education and the National Institute of Education. In addition:

> Section 161 requires the Commissioner of Education and the Administrator of the National Center for Educational Statistics jointly to develop information elements and uniform definitions for a national vocational education reporting and accounting system; and
>
> Section 171 establishes a coordinating committee on research in vocational education to "...develop an effective management information system on the projects funded...in order to achieve the best possible monitoring and evaluation of these projects."

These provisions of the 1976 Act not only are an indication that past evaluative efforts have been inadequate, but constitute a Congressional mandate to improve existing systems for the evaluation of vocational education programs. This mandate is made explicit in Section 523 (b) of the Act, which directs the National Institute of Education to undertake a thorough

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evaluation and study of vocational education programs, including those conducted under the Comprehensive Employment and Training Act (CETA) and other legislation, to include the following:

1. A study of the distribution of vocational education funds in terms of services, occupations, target populations, enrollments, and education and government levels...

2. An examination of how to achieve compliance with, and enforcement of, the provisions of applicable U.S. laws...

3. An analysis of the means of assessing program quality and effectiveness...

4. The conduct of experimental studies...

5. Findings and recommendations, including recommendations for changes in legislation....

The Institute's report to the Congress and the President, due in 1981, should be one of the major factors in determining the future direction of vocational education. However, if the Institute's study and other evaluation provisions of the 1976 amendments are to be most effective, consideration must be given to the reasons why past evaluative efforts have been less than adequate. The major question to be answered is the following: "Why is it that during an era when more information is collected on federally sponsored educational programs than has ever been collected in the history of the nation, and more people are employed in collecting, processing, and analyzing educational program data than have ever before been employed at similar tasks, answers regarding the effectiveness of programs are so elusive? This question must be addressed before future evaluative studies are designed.

What is vocational education? Two of the major problems which have faced evaluators of vocational education in the past, and probably will continue to face future evaluators, are as follows: (1) There does not seem to be any agreement among policy makers, administrators, and educators regarding the basic purposes and objectives of vocational education; and (2) there is confusion at the federal, state, and local levels regarding federal purposes in supporting vocational education. The two problems are actually interrelated. Since the early 1960's, federal intervention in vocational educational and other employment and training programs has been designed primarily to help solve what have been identified as national problems. From the Manpower Development and Training Act (MDTA), four vocational education acts, the Economic Opportunity Act, the Emergency Employment Act, CETA, and the recently passed Youth Employment and Demonstration Act, among others--have emerged a lengthy string of initialed, acronymic, or slogan-named programs mostly addressed to the legitimate end of bringing the structurally unemployed, disadvantaged, and other excluded individuals into the mainstream of the labor market. Inevitably the purposes and objectives of educational programs both "academic" and "vocational" have been lumped together with those of short-run employment and training programs (or what used to be known as "manpower programs"). Although the two types of programs are related, their target populations are quite different--one is for individuals who have not yet entered the labor market; the other is for unsuccessful labor market participants. It follows that the purposes and objectives of the two types of programs, although sharing some similarities, would also be quite different.

If future evaluations are to be of maximum use to policy makers and program administrators, the distinction between an educational program and a short-run employment and training program must be recognized, and the specific purposes and objectives of the two types of programs must be clearly delineated. This is particularly important because the study called for by Section 523 (b) of the 1976 amendments to the Vocational Education Act--a study which is to be conducted by the National Institute of Education--includes both evaluations of vocational education programs in general and those conducted under CETA and other legislation. However, there is an even more important reason for recognizing and defining the distinction between educational programs, whether they be academic or vocational, and employment and training programs. One of the major reasons for contention between educators and administrators of employment and training programs (CETA prime sponsors, for example) is because the two types of administrators approach problems from different perspectives. If the distinction between educational programs and employment and training programs is recognized from the national to local levels, it can be anticipated that improved relationships between educators and the operators of employment and training programs would result, if for no other reason than that there would be a common understanding of the differences between the two types of programs, and the program components required of each.

The key is in arriving at a definition of vocational education and establishing specific objectives for vocational education programs which are measurable, and which would provide the basic structure for future evaluation of the program. Once such a definition and objectives were formulated, vocational education participation in employment and training programs could be analyzed from an entirely different point of view, that is, the effectiveness of vocational education techniques in helping to meet the objectives of employment and training programs. The purpose of this paper is therefore to explore factors which should be taken into consideration in defining and establishing objectives for vocational education in general, and for vocational education participation in employment and training programs. The remainder of the paper is divided into four sections: (1) A review of the Federal Vocational Education Movement, (2) Goals and Purposes, (3) Criteria For Evaluating Vocational Education, and (4) Summary.

A Review of the Federal Vocational Education Movement

In order to gain some perspective on problems related to vocational education which led to the revitalization of the program through the Vocational Education Act of 1963, a review of the origins of vocational education in the United States--especially federal intervention in vocational education--is called for. Of particular interest is the economic and demographic climate which existed when the Smith-Hughes Act was passed in 1917, thus creating a system of education considered separate and distinct from "academic" education.

Changing national needs. During the early years of the twentieth century, as more and more youth were going to school, it became evident that the traditional education program was not meeting the needs of all youth. Few persons stayed in school beyond the eighth grade, and many dropped out at the end of the sixth grade. In the school year 1908-09, for example, of all the persons in school, 93 percent were in elementary school (grades 1-8), 4 percent in high school, and 3 percent in the colleges and universities.[1] At the same time, the nation's seemingly insatiable demand for unskilled workers was beginning to decline, and the demand for higher-skilled workers was on the increase. These factors combined to create a demand for a different type of education, one that would prepare students for participation in the labor force--a function that had never before been considered a school responsibility. The previous educational area of concentration was the "three R's," or the creation of a "literate citizenry" whose members could function in a democratic society. Training for employment was considered an employer responsibility, either by means of on-the-job training or apprenticeship. Thus, the target population for vocational education was the majority of students who were not expected to remain in school beyond the eighth grade, a majority which included large numbers of immigrants and the children of immigrants in urban areas, and sharecroppers and tenant farmers in rural areas. The introduction of vocational eduction was based on the existence of a large "working class," most of whom were not interested in (or had no hopes of) advancing to higher levels of academic education. There was also a hidden agenda: by integrating academic educational with vocational training, it was hoped that students would remain in school longer, thus keeping them out of the labor force and, by so doing, reducing unemployment rates; and that students would be prepared in school to find entry jobs *on their own* without requesting the intervention of ward bosses and other political leaders who were finding the "job development" process a bit of a political headache. The proponents of vocational education did not, however, propose vocational education as a *substitute* for academic education; rather, vocational education was seen as a *supplement* to academic training. The basic purpose of vocational education was to make the educational process more meaningful to the majority of students who had no academic aspirations by integrating academic training and vocational preparation. Looked at in this light, today's proponents of the career education concept are merely updating proposals made by proponents of the vocational education concept in the early 1900's. Both agree that one of the purposes of education--but not by any means the *sole* purpose--should be to prepare students for labor market participation.

Occupational areas. The original occupational areas selected for vocational education corresponded closely to the occupational areas in which most working-class students would obtain employment after leaving school and entering the labor market. These were trade and industrial occupations, vocational agriculture, and home economics. Later, four additional occupational areas were added: distributive education (1937), technical education (1958), business and office occupations (1963), and health occupations (1963). When vocational education came under attack in the early 1960's, one of the major charges made by critics of the system was that the *specific* training available to students (within the seven occupational classifications) was for jobs that were obsolete, and that vocational education had not kept pace with the dramatic technological changes that had occurred in the economy since World War II. Yet, ten years after the passage of the Manpower Development and Training Act in 1962--an Act which was supposed to expand training in new and evolving occupations--an assessment of MDTA in meeting employers' needs in skill shortage occupations found that 72 percent of all MDTA offerings were in five traditional occupational areas: clerical, automotive, welding, metal machine trades, and medical occupations.[2] Why? Primarily because these were the occupational areas in which there was a demand for workers and in which the schools had been successful in placing students. What about new and evolving occupations? Well, either nobody knew what they were (or if they existed at all), or entrance into the new occupational areas was controlled by intermediaries other than the schools--proprietary schools, for example, labor unions (through apprenticeship programs), or by employers themselves by means of company-sponsored training programs (IBM, for example). The study also found that no system had been established for identifying "skills shortage" occupations; in fact, no one could define with any precision exactly what constituted a skills-shortage occupation.

In retrospect, it appears that criticism of vocational education offerings was in reality an attack on one of the major foundations of the system itself, that is, that a special type of education (considered inferior by most academic educators) should be reserved for the "working class." When the Smith-Hughes Act was passed in 1917, working-class families, including rural farm families, did not expect their children to attend much more than eight to ten years of school before becoming wage earners or sharecroppers in American industry and agriculture. By 1963, only the remnants of this expectation system remained and vocational education stood out as a symbol of the past. Yet, vocational education was providing training in occupational areas that were in demand. The problem was that the occupational areas were considered inferior; it was inevitable, therefore, that vocational education itself would be considered inferior--a type of education reserved for those who were not bright enough to make it in academic courses.

Student options. One of the purposes of the Smith-Hughes Act was to increase the educational and occupational options available to 1917 students. It was hoped, for example, that by integrating academic and vocational training, students would stay in school longer and thus become "more educated," and by providing training in "families" of occupations, their labor market options likewise would be increased. However, the educational and occupational options available to most 1917 students were extremely limited. By the time the average student of the period reached the age of 16, his or her economic career was pretty much set; thus the training that students received in school, immediately prior to their entrance into the labor force, could be of tremendous importance to them in finding work. Today, a wide variety of options is available to most students, and few young men and women decide on an occupation by the age of 16. Thus, the training that students receive in school, although no means unimportant, is not quite as crucial as it was to the 1917 student. Vocational education programs are often judged on the basis of whether or not graduates are placed in "training-related" jobs. This criterion may not be as relevant today as it was in the past. Certainly, if academic education were judged on the basis of the percentage of its students who graduate from college, the program would be declared a failure. Garth L. Mangum notes: "eighty percent of secondary school students are preparing to do what 80 percent will not do, that is, graduate from college. Approximately eight out of ten of today's secondary level students are enrolled in an education curriculum that allows people to be prepared for work only after college attendance. Yet three out of four of those who begin high school complete it, one-half of those who do so go on to college, and one-half of those who enter college graduate."[3]

Original purpose. Thus, the original purpose of vocational education was to prepare working-class students for semiskilled and skilled jobs in the nation's factories, mines, mills, and farms. Students who were referred into the system were not considered "academically oriented," but "good with their hands," or capable of being taught to work with their hands. However, vocational education nevertheless was thought of as a form of education, not merely a tool to prepare students for labor market participation. In fact, one of the stated purposes of vocational education was to make the traditional education curriculum more palatable to students, and more realistic in terms of the jobs they would be called on to perform after leaving school. What vocational education did, in effect, was to add a component to educational programs--preparation for labor market participation.

Slow to change. World War II and its aftermath brought great changes in American society--changes that had a tremendous effect on the nation's entire educational system, including vocational education. It was an era of rising expectations for all classes of Americans, but particularly those of the so-called working class. The G.I. Bill of Rights provided millions of ex-service men and women with the opportunity to attend college and other educational institutions--opportunities they would never have had, had it not been for the war. Rapid technological change in agriculture drove millions of Americans, once entirely dependent on agriculture for their living, in search of work in the nation's cities and metropolitan areas. The application of advanced technology to industry made sweeping changes in the very nature of work. The United States became the first nation in the history of the world to have more people employed in providing services than in the manufacture of things.

But perhaps the change that had the greatest effect on vocational education was psychological in nature. The expectations of individuals who--only a single generation in the past--would have seen themselves locked into a way of life that featured little geographic, educational, and economic mobility were raised dramatically. Ex-servicemen and women who had attended college under the G.I. Bill of Rights fully expected their own children to attend college. This meant that they had to be enrolled in the college preparatory or general education courses in high school. Vocational education? That was for the academic rejects--those who had no hopes of eventually obtaining prestigious jobs, jobs that allowed individuals to "dress" for work, that required a college degree or, at the very least, a high school diploma, and jobs that were symbols of upward mobility, or movement up from the working class to the middle class or even higher.

The educational theory of the period supported the rising expectations of the general public. It was during the 1950's, for example, that the "track system" was introduced--a system that resulted in the separation of "academic" students from those judged to have little academic ability.

Even the National Defense Education Act of 1958, which emerged because the Soviet Union was able to launch a missile into space (Sputnik) ahead of the United States, was primarily concerned with the training of scientists and engineers. Vocational education? It was the forgotten program. It continued to receive appropriations from Congress each year, but little attention was focused on it. Its facilities and equipment were becoming obsolete; it appeared to be training a disproportionate number of students in nondemand positions (such as agriculture), or in occupations that were considered inferior (such as domestics through home economics courses); and, if it was thought of at all, it was generally associated with the "third track," or courses for students who had no educational or occupational goals, little motivation, and less academic ability. It appeared to be a program that had been left behind--a program without a mission.

1963 reassessment. It is ironic that public attention was once again focused on vocational education in the 1960s when the nation's priorities shifted from the academically gifted to the "structurally unemployed," the poor, the disadvantaged, the handicapped, and others who had "special" problems in making the transition from school to work--ironic because vocational educators had always claimed that vocational education was used as a "dumping ground" for academic rejects. Critics of the system, on the other hand, blamed the stagnant state of vocational education on "conservative administration," which resulted in an unwillingness to update facilities, equipment, and curricula, and an even greater unwillingness to enroll the disadvantaged, handicapped, and others with special labor market problems. The fact is that both were right. The administration of vocational education was conservative, but it is equally true that the system was underfinanced and that vocational education administrators resented the implication that vocational education was an inferior type of education reserved for "inferior" students.

One vocational educator put it this way: "For twenty-four years the nation's elite corps of educators and educational critics concentrated on an elite corps of students--the academically oriented, the gifted, the college bound; vocational education was pushed aside, looked down on as an embarrassement to educators and students alike. Then, when the national emphasis shifted to the disadvantaged, these same educators and critics charged vocational educators with being conservative and elitist."[4]

Nevertheless, with the passage of the Vocational Education Act of 1963, vocational education was dragged, albeit reluctantly, into the modern age. Congress declared that the objective of the Act was the employment preparation of four groups of people rather than the labor market demands of various occupational categories (as its objective was in the past). Specifically, the Act stated:

> ...persons of all ages in all communities of the State--those in high school, those who have completed or discontinued their formal education and are preparing to enter the labor market, those who have already entered the labor market but need to upgrade their skills or learn new ones, and those with special educational handicaps--will have ready access to vocational training or retraining which is of high quality, which is realistic in the light of actual or anticipated opportunities

for gainful employment, and which is suited to their needs, interests, and ability to benefit from such training.

Prior to the passage of the Vocational Education Act, vocational education had been assigned responsibility for providing skills training and retraining for individuals enrolled in vocational programs under the Area Redevelopment Act and MDTA. Later, vocational education would participate in programs funded under the Economic Opportunity Act. If vocational education had been forgotten in the past, it had entered a new era, had been assigned new and expanded responsibilities, and was now an integral part of the nation's overall attack on poverty.

The problem was that vocational education was now expected to perform two distinct tasks: (1) improve employment preparation for high school students, or individuals in the process of receiving an education; and (2) provide remedial services for unsuccessful labor market participants. Conflict between vocational education "reformers" and the vocational education hierarchy resulted because the reformers--although recognizing the need to improve employment preparation for in-school youth--were primarily interested in an improved vocational education system as a partial solution to so-called "structural unemployment" problems, e.g., the retraining of workers displaced by technological change, whereas vocational educators still looked upon vocational education as a two-to-four-year educational program, primarily for secondary-level students.

The result was confusion as to what the goals of vocational education should be: the reformers saw vocational education as a solution to short-run problems, or the training of unemployed workers for jobs in "demand" occupations in a relatively short period of time, whereas traditional vocational educators viewed the mission of vocational education as the preparation of students for a lifetime of work in a dynamic economy.

Congressional mandates to set aside vocational education funds for special groups (the handicapped, disadvantaged, and, more recently, women) added to the confusion, as did Congressional set-asides for types of vocational education (cooperative education, work study, and home economics).

The growth of community and junior colleges, most with vocational education divisions, made it possible for high school graduates and, in many cases, nongraduates, to enroll in vocational education classes, as well as in courses leading to "associate" degrees. Vocational education found itself providing two distinct programs simultaneously and being evaluated on the basis that the two types of programs had the same objectives. Furthermore, federal evaluations focused on the specific Congressional mandates, to wit the effectiveness of vocational education programs for the handicapped and disadvantaged, or the effectiveness of work education, cooperative education, and home economics courses. The result was piecemeal evaluation and/or evaluations in which the objectives of specific types of vocational education were not well understood or delineated.

Finally, the concept of "career education," which came into its own in the 1970's, appeared to question the validity of separate "academic" and "vocational" education systems. Whereas the original proponents of vocational programs advocated preparation for employment for some students, namely, for the "working class," career education implies that all students, regardless of the curricula or courses in which they are enrolled, should be provided with both orientation to the world of work and specific skills training.

The question arises, therefore, that if the overall purposes and specific goals of vocational education cannot be agreed upon, how it is possible to establish criteria by means of which vocational education can be evaluated? Can vocational education be defined? Is it education? Is it merely short-run training for the structurally unemployed? Is it both? Is it a component of "career education"? Is it mainly a program for the least employable students and unemployed workers? Or is it a program for students and unemployed workers whose interests, talents, and abilities are in one or more of vocational education's seven occupational areas? Is it remedial? Or is it purely and simply preparation for employment? Is it all of these things?

Goals and Purposes

There is no consensus regarding the goals of vocational education, and anyone who dares put them down in black and white is opening himself to attack. Nevertheless, for the purposes of this paper, it can be said that the goals of vocational education programs (for students not yet in the labor market) and vocational education components of employment and training programs (for out-of-school youth and unemployed or unsuccessful labor market participants) are different.

One overall goal that applies both to educational and employment and training programs is to increase the efficiency of the labor supply by preparing individuals for employment. The techniques that can be used to accomplish this goal include orientation to the world of work, career exploration, prevocational training, skills training in general occupational areas or specific occupations, work education, or any combination of these techniques. Vocational education also can be combined with basic or remedial education, English as a second language, counseling, and other educational services. Regardless of the components of a vocational program, its ultimate purpose is to help prepare individuals for employment in a manner that is acceptable both to participants in vocational education programs and to employers.

There are differences between vocational education as a component of an educational program and the application of vocational education techniques to employment and training programs. Vocational education has educational goals as well, while employment and training programs share an additional goal that has no relationship to vocational education.

Employment and training programs. These programs, whether they are supervised by the schools or other agencies, have two purposes: (1) to prepare out-of-school youth and unemployed or unsuccessful labor market participants for employment in as short a period of time as possible; and (2) to provide income maintenance to program enrollees. The second purpose, which is not shared by vocational education programs, adds a complication to the evaluation of employment and training programs. Administrators and evaluators of employment and training programs must face this fact. In addition, the goals of employment and training programs are much narrower than those of vocational education programs. Their major objective is to place individuals in unsubsidized employment in as short a period of time as possible. Vocational education is usually called upon to provide short-run skills training in "demand" occupations. Such training is generally no longer than 26 weeks in length and has as its immediate objective the placement of trainees in training-related jobs as soon as their training is completed.

Education programs. According to Rupert N. Evans, there are three basic objectives in any public school vocational education curriculum: (1) meeting the manpower needs of society; (2) increasing the options available to each student; and (3) serving as a motivating force to enhance all types of learning.[5] Underlying these objectives, however, is the overriding consideration that vocational education for students who have not yet entered the labor market on a full-time basis is only one component of a total educational program--a component that stresses preparation for employment. The immediate objective of such a program is not economic but educational in nature. The vocational component should be viewed as an integral part of a total educational program; it should not be viewed separately. Students are not paid to attend classes, and in most cases (especially at the secondary level) students have not made firm decisions regarding the careers they wish to pursue.

With this in mind, Evans' first objective--"meeting the manpower needs of society"--must be considered in its broadest sense. It does not necessarily suggest that students emerging from vocational curricula should be skilled carpenters, electronics technicians, secretaries, etc., but that they should have a thorough grounding in vocational and academic skills so that they can adapt themselves to the demands of an ever-changing economy. Indeed, if Evans' first objective were interpreted solely as skills training in specific occupations, his second objective--"increasing the options available to each student"--would be rendered impossible. Training a student in a specific occupational area does not increase the student's options; rather, it limits them. Herein lies one of the basic differences between vocational components of educational programs and employment and training programs: vocational training in connection with employment and training programs should be in specific occupational areas which are in demand in the local community, since the immediate objective of such programs is to place individuals in employment in as short a period of time as possible; vocational training in connection with educational programs must be a good deal more exploratory in nature, because one of the principal objectives of educational programs is to increase student options. This does not mean that students should not be trained in specific occupations; such training is sometimes advisable, especially for postsecondary level students, but skills training is not the sole objective--or even the most important objective--of an educational program with a vocational component.

Evans' third objective--"serving as a motivating force to enhance all types of learning"--is purely educational in nature. The theory is that the integration of vocational training with academic training will result in making the overall educational program more realistic and, therefore, more meaningful to students enrolled in all school curricula. The goal here is to increase student motivation to learn by demonstrating the relevance of school curricula to the world of work.

The mix-up. This analysis suggests that past evaluations of vocational education programs often have been less than adequate because they have concentrated on the economic goals of the program without giving sufficient consideration to its educational goals. This failing is due primarily to a failure to distinguish between the goals of employment and training (or "manpower") programs and those of educational programs.

Although it is true that one of the major goals of vocational education is economic in nature, that is, to facilitate the labor exchange by preparing students and out-of-work youth and adults for employment, it is also true that the specific objectives of vocational education programs are different from those of employment and development programs. The accompanying tabulation on the goals of vocational training summarizes this "difference."

Education	Employment & Training (Manpower)
1. To provide full-time students with vocational training over a two-to-four-year period of time, which is integrated with academic training, and which is often exploratory in nature.	1. To prepare out-of-school youth and unemployed or unsuccessful adult labor market participants for employment in demand occupations in as short a period of time as possible.
2. To increase student options--options which include further education as well as immediate post-school employment.	2. To provide income maintenance for program enrollees.
3. To serve as a motivating force to enhance all types of learning.	

It follows that if the goals of the two types of programs are different, separate criteria may be developed for assessing their effectiveness. Without specificity, the criteria necessary for assessing both the overall program and its specific components will not emerge, and without criteria, the information necessary for performing evaluative measurements will be neither identified nor collected.

Criteria for Evaluating Vocational Education

It is not the purpose of this paper to set down detailed criteria for the evaluation of vocational education programs, but to suggest a framework, or a basis, for the development of evaluative criteria. This framework should distinguish between (1) the goals as opposed to the purposes of vocational education, and (2) the vocational components of educational programs as opposed to those of employment and training programs.

Federal set-asides. Federal set-asides for special target groups, special educational techniques, and efforts to bring about social change have to do with the purposes of vocational education in helping to solve national problems--purposes that vocational education shares in common with other programs and institutions. As such, they apply across the board to all vocational education problems, both those that are primarily educational in nature and those that are designed to solve structural unemployment problems, or are economic in nature. Set-aside programs for the disadvantaged, handicapped, and "regular" students, as well as those for various types of vocational programs (work education, home economics, and the elimination of sex sterotyping), can be considered parts of regularly planned, statewide vocational education programs. Additional criteria may be applied to set-aside components of overall vocational programs, but the purposes of vocational education are sufficiently broad to encompass the "special" efforts called for by Congress.

Evaluators, therefore, should be careful that the criteria developed for the evaluation of vocational education are based on the program's goals rather than its purposes.

Employment and training criteria. One of the purposes of employment and training programs is to prepare unsuccessful labor market participants for employment in as short a period of time as possible. The success criteria for such programs are simple: (1) relatively high completion rates; (2) low dropout rates; (3) relatively high placement rates; and (4) high job retainment and promotion rates. The objective is to put the unemployed to work as fast as possible; the basic criterion for assessing program success is the extent to which the unemployed are put to work.

However, employment and training programs have an additional purpose--income maintenance. Thus, even if program enrollees are not placed in jobs following their participation in the program, enrollees are nevertheless provided with allowances while they are in the program, thus fulfilling the second objective of employment and training programs. Moreover, the training they receive while enrolled in a program may be of future use to them, or may increase their geographical mobility, i.e., they may move to areas where the skills they have obtained are in demand.

This suggests that a criterion for assessing the effectiveness of employment and training programs is the extent to which program enrollees are placed in jobs, either immediately or in the future, and either in their local communities or in other communities of the state and nation. The income maintenance aspects of the program are unrelated to the types of services enrollees receive while enrolled in employment and training programs; they are in effect automatic. The fact that enrollees are paid to attend classes, however, may have negative effects on the overall success of programs.

Educational criteria. Although the same criteria outlined above can be applied to vocational education programs, they are not by any means the sole criteria, nor are they necessarily the most important criteria for the assessment of educational programs. To assess the effectiveness of vocational components of educational programs, criteria relating to the following also must be developed: (1) the extent to which graduates of vocational courses are well grounded in both academic and vocational skills, thus increasing their adaptability to alternative employment opportunities in a dynamic economy; (2) the extent to which students are given the opportunity to explore various career alternatives, including clusters of jobs within occupational categories, thus increasing the options available to each student; and (3) the extent to which the vocational component of an educational program serves as a motivating force to enhance all types of learning.

Students enrolled in school on a full-time basis are still in a formative stage; decisions regarding their lives, including their choices of occupations, are still in a state of flux. Thus, criteria relating to placements, or placements in training-related occupations, are not necessarily as important to educational programs as they are to employment and training programs. What seems to be more important is the extent to which the vocational component aids students in exploring potential careers and mastering nonvocational subjects, espcially basic education skills.

Summary

The title of this paper asks a question: "Vocational Education: Education or Short-Run Training Program?" The answer, of course, is that it is both. Vocational training is a component both of educational programs for secondary and post-secondary level students and of employment and training (or "manpower") programs. The crucial question is whether the goals of the two types of programs are the same or different, and depending on the answer to this question, whether the same or different criteria should be developed for assessing their effectiveness.

In exploring this question, the establishment of vocational education in the early 1900's, the program's decline and rejuvenation in the early 1960's were traced. Selected aspects of vocational education and its relationship to employment and training programs were discussed. Implications for evaluation were drawn.

If future evaluations of vocational education programs are to be of maximum use to policy makers and administrators, the various goals of the program must be well articulated and specific criteria for judging the success of the various types of vocational education programs must be established. It is particularly important that a distinction be made between vocational education programs for students not yet in the labor market and employment and training programs or short-run training programs for unemployed youth and adults. The two programs have different purposes, and different techniques must be employed in evaluating them.

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IV. SELECTED ASPECTS OF VOCATIONAL EDUCATION POLICY

The commissioned papers did not address all the policy issues in vocational education that have been raised and debated. For example, differences between secondary and postsecondary training programs and the consolidation of funds under the Education Amendments of 1976 were not treated separately. On the other hand, several planning papers centered on themes pertinent to federal vocational education policy, but have not figured prominently in most discussions of that policy.

In one of these papers, "The Role of Vocational Education in the Nation's Employment and Training Programs," Gordon I. Swanson takes a broader view of vocational education, examining its place in a national policy of employment and training. He reviews this delivery system role in current legislation, discusses contemporary themes in education, and concludes with some observations on the capability of vocational education for improving federal employment and training policy.

In "Vocational Education in Rural America: Current Problems and Prospects," Jonathan P. Sher presents an argument for increasing attention to rural vocational education. He emphasizes the diversity of rural education by noting that "one can find evidence to support nearly any characterization." He maintains that there is neither reliable nor systematic research in this area on which policy recommendations can be based. Thus, Sher feels that a priority needs to be placed on thinking about strategies for education and training for rural America and how best to fit alternatives to different communities. This, he argues, is only a first step.

The 1976 Amendments show increasing interest in the issues associated with equality of access to vocational education programs. Phyllis McClure's paper, "Race and Sex Compliance Issues in Vocational Education," outlines the major civil rights compliance issues in vocational education. She describes the available evidence, and its deficiencies, regarding the participation of women and minorities and the compliance issues that arise. She concludes by offering suggestions for research and data collection on these matters.

Related to issues of equality of access to vocational education is training for the disadvantaged and the handicapped. In this area the legislation mandates a set-aside funding pattern to establish federal policy. Phyllis Hamilton, in "Vocational Education for Special-Need Students," reviews the existing evidence and gaps in research. She also notes the problems that arise in coordinating federal programs to meet the needs of these populations.

To what use vocational education can be put to meet the economic needs of Americans is a concern of Lester C. Thurow. Indeed, in an unpublished planning paper, "Policy Analysis and Suggested Changes in Vocational Education," Roman Pucinski argues that federal vocational education programs will undergo greater challenges in the future. One of these demands is the training needs of a changing economy. Thurow places a challenge before vocational education with his paper, "Vocational Education as a Strategy for Eliminating Poverty." He examines the economic implications of vocational education foundations and what its role in this context should be. Again, a view of federal vocational education as one of many human resource policies is presented.

THE ROLE OF VOCATIONAL EDUCATION IN THE NATION'S EMPLOYMENT AND TRAINING PROGRAMS

Gordon I. Swanson

In identifying the rôle of vocational education in the nation's employment and training programs, this paper will first highlight the policy context of such a role as expressed in recent legislation. Second, it will describe several of the principles that have guided the development of a structure of delivery systems. Third, it will highlight a number of concepts that are recurring themes in all public educational programs and particularly in programs of vocational education. Fourth, it will identify some of the capabilities that exist in vocational education. Finally, it will highlight some of the needed changes in all efforts to improve the nation's employment and training programs.

Vocational Education and Training Legislation, 1961-77

Legislation governing such a complex set of problems as are embraced by vocational education cannot be expected to have much conceptual orderliness. Legislation is, after all, an activity involving coalitions and compromises surrounding multiple purposes. It requires administrative and decision-making responsibility distributed throughout multiple bureaucracies existing at various levels of government. Passed in response to the presumed needs of constituencies, its effect is often more dramatic in the constituencies it creates.[1]

Viewed in retrospect, legislation related to such activities as vocational education and manpower begins to acquire a certain pattern and character. But to say that such a pattern or character represents a deliberated policy orientation would be an exaggeration. The legislation during the 1961-77 period appears as more of an exercise in chronic frustration. Although credited with initiating activism and social protest in the late sixties, college students and other youth may have been merely mirroring the frustrations which they were inheriting from Congress.[2] Nevertheless, the 1961-77 period provided some baselines for current thinking and it now repays our attention to examine it.

In 1961, Congress passed and the President signed the Area Redevelopment Act (ARA). Similar legislative efforts had already been sidetracked by two presidential vetoes.[3] The Act was intended to re-

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kindle the economic vitality of depressed areas by attracting industry. In essence it was regional equality-of-opportunity legislation with skill training as a central feature and a visible attraction.

In 1962, Congress passed the first major manpower legislation, the Manpower Development and Training Act (MDTA). This legislation was introduced in March 1961 as a bill to expand vocational education. Its initial purpose was the training of the technologically unemployed, i.e., the technicians and engineers who were soon to be the casualties of structural unemployment caused by automation--the crisis topic which was appearing on every conference agenda of the time.

In 1963, Congress amended the MDTA to initiate an additional emphasis, namely, youth training. The amendment reduced the required minimum age of MDTA trainees to 17 years and expanded the federal share of the costs of institutional training from one-half to two-thirds. The federal obligation for expanded youth training, including youth of high school age, was thus launched. A new Vocational Education Act also appeared in 1963. New features included an expansion of funding, some added attention to planning, and an increase in categorization but with a shift in categories from the substance of instruction to specific target audiences. This legislation launched a trend of substituting process for substance in vocational education.

In 1964, the nation discovered poverty and President Johnson declared war on it. The major weapon was skill training; limited attention was given to job matching and job creation. A conspicuously establishment-threatening law, the Economic Opportunity Act (EOA), was enacted in 1964 with a full-blown set of youth programs combined with community action programs, including Adult Basic Education (ABE). The Job Corps (residential) and its nonresidential counterpart, the Neighborhood Youth Corps, came into existence as added elements of concern for youth employment.

In 1965, the MDTA was again amended by folding in the training elements of ARA and acknowledging that certain types of occupational training required longer training periods. Training time as well as allowances were extended to 104 weeks, a doubling of the previously established maximum. Coupled with this extension of training time was an emphasis on serving older trainees, which reduced the proportion of training slots available to youths (those under the age of 22) to one-fourth. This did not mean a reduction in the emphasis on youth training, since youth training opportunities had earlier been expanded by the Job Corps and Neighborhood Youth Corps programs.

Also in 1965, Congress passed the Elementary and Secondary Education Act (ESEA), the initial step in providing general federal support to elementary and secondary education. As with much of the social legislation of the sixties, ESEA focused on special target groups and gave very few options to local jurisdictions.

In 1966, the unemployment rate was relatively low and it was becoming clear that a change in the focus of training was underway, a change to give much more attention to the disadvantaged. The problems of the technologically unemployed, which had triggered the MDTA, were now in the background.

In 1967, a new slogan, "off the welfare rolls and onto the payrolls," began to appear. The Social Security Act was amended in an attempt to encourage economic independence on the part of AFDC recipients. The program mounted was the Work Incentive Program (WIN). Although the Departments of Labor and Health, Education, and Welfare, were given joint administrative responsibility for the program, its subsequent implementation drifted comfortably toward the more alert and aggressive agency, the Department of Labor. Program services included literacy training, health services, and child care as well as skill training.

The legislative events of 1967 and the related program initiatives represented a change of course for the MDTA and for manpower programs in general. In fact, the term "manpower" took on a new, derived meaning. Now included within the term was the concept of an integrated cluster of social services including such things as income maintenance, health services, work incentives, child care, literacy programs, skill training, and various extensions or adaptations of public welfare. With federal regulations being employed to set standards for health, housing, nutrition, training, and income, the year 1967 can be seen as signaling the acceptance of the existence of a welfare state.

In the same year, 1967, the Economic Opportunity Act was amended to create "special impact" programs. Created within the Office of Economic Opportunity were area development projects similar to those created by the ARA in 1961, whose training elements had been incorporated into the MDTA in 1965. The EOA Amendments also created the Concentrated Employment Program (CEP), which included features for coordination and planning. The implementation of the CEP began the demise of the inadequately supported Comprehensive Area Manpower Planning System (CAMPS), which had been established as an interagency planning and coordinating mechanism at the local, state, regional, and federal levels.[4]

In 1968, Congress amended the MDTA and directed the Secretary of Labor to create a computer-based information system for job matching on a national, state, and local basis. This was among the first of a series of congressional concerns directed at creating a data-based information system for informing individuals about the job-market relationships related to employment and training. Also involved in the 1968 Amendments was a provision for establishing Manpower Training Skill Centers. To test the possibility of job creation in the private sector, a Job Opportunities in the Business Sector (JOBS) program was also created by the Administration.[5]

The Vocational Education Act of 1963 was amended in 1968 to provide emphases which were largely parallel to the trends in manpower legislation. There was a renewed emphasis on special target audiences, a re-emphasis on comprehensive planning, and special interpretations of decategorization (see below).

In 1969, President Nixon called upon Congress to establish a Comprehensive Manpower Service System, to embrace a number of the concepts which had appeared separately in some of the earlier legislation. Included among these were the concepts of decategorization (a reduction in allocative decisions made at the federal level in favor of solutions which were better provided at subsidiary levels) and decentralization (a redistribution of decision making to require more decisions at the state and local levels). In most respects, the proposal was a call for manpower special revenue-sharing. It is not clear whether the proposal grew out of a sense of frustration with previous efforts at the federal level or a sense of growing confidence in the ability of local governments to deal with employment and training problems.

In 1970, Congress responded by passing a new Manpower Act. With unemployment rising rapidly, the congressional response provided for a significant amount of public service employment. It contained too much, or at least too much to please the President, and he vetoed it. But the die was cast; the role of the government as the employer of last resort had become an element of congressional intent for subsequent manpower programs.

In 1971, the Administration introduced legislation to establish manpower revenue-sharing. Congress responded by passing the Emergency Employment Act, which the President signed. This Act was the clearest expression yet of welfare purposes within manpower programs. It created the Public Employment Programs (PEP), which required the federal government to provide 90 percent of the funding costs with only a marginal emphasis on training or job development. Eighty-five percent of the resources were required to be used for wages and employee benefits.

In addition, the Social Security Act was amended in 1971 to increase the work requirement of the AFDC recipients enrolled in the Win program. The welfare orientation of congressional thinking about employment problems was clearly in the forefront.

In 1972, Congress engaged in a flurry of activity focused on problems of unemployment and the governance of programs to deal with it. Eight separate bills went to the stage of serious hearings. The debated issues were those which had arisen in the previous five-year period: decentralization of decision making, decategorization of programs, private versus public sector employment aimed at reducing unemployment, the role of income maintenance, and the unusual problems of special target groups. Receiving little or no attention, however, were the overarching policy questions of longer-range significance: for individuals, the transitions from school to work and from one occupational ladder to another, and for government, the transition from short-term program responses to longer-term program planning.

In 1973, the series of short-term programs authorized during the previous six years culminated in new manpower legislation, the Comprehensive Employment and Training Act (CETA). Its most important feature was the creation of a network of local authorities called prime sponsors and the elevation of these authorities to a vital position in order to accommodate decategorization and decentralization. The legislation was a full accommodation of a manpower voucher plan, with prime sponsors occupying the role of agency voucher holders.

The Comprehensive Employment and Training Act became law in December, 1973, and much of the following year was devoted to problems of its accomodation and implementation. Although Title II of the Act contained provisions for public service employment, the Act was amended in 1975 to add Title VI, a special provision for public service employment tied to the level of unemployment. The 1975 Amendment clearly tied CETA to the rate of unemployment and thus identified employment and training programs as dependent upon the forces, including fiscal policies, influencing the level of employment.

In 1976, Congress passed and the President signed new vocational legislation, the Vocational Education Amendments of 1976. Its passage had been preceded by the introduction of numerous bills over a three-year period: Nineteen bills were introduced in the House and two in the Senate before a compromise was reached on the legislation. The main theme of debate in the Vocational Education legislation involved administrative concerns and jurisdictional questions within the educational establishment. This debate served to raise some fundamental policy questions and it also served to diminish, but not to eliminate, the congressional determination to continue moving toward decentralization, decategorization and revenue-sharing.

The Vocational Education Amendments of 1976 defined the responsibility placed on state boards of education for demonstrating representative democracy in the process of preparing state plans. Programs authorized under the Act gave priority to special target groups, with a great deal of attention focused upon various categories of the disadvantaged. The Act calls for an elaborate data and information system, multiple evaluations, and an extensive system of advisory councils.

Stability and Change in Legislative and Program Emphasis

Statutory change in employment and training programs has been an annual event since 1961. Except for the MDTA of 1962, which was enacted in anticipation of employment dislocations arising out of automation, none of the legislation was aimed at dealing with future conditions; rather, it focused on a current problem or responded to previous situations. Viewed as a series of legislative events rather than as single events, the legislation seems to reflect trial-and-error responses to frustration at the federal level. Like public opinion, legislation does not anticipate events; it merely reacts to them.

Looking beneath the many amendments to existing legislation and the appearance of frequent change, one can discern a number of implicit, unchanging assumptions upon which programs were based. First, there was an unrelenting reliance on skill training. Somehow, there appeared to be an unquestioned belief that skill training was the missing element in individual access to jobs or that skill training was the key to the nation's problems of unemployment.

Second, there was a continuing strong reliance on the concept of an employment market and its capacity to absorb and allocate human resources. There was concern about the imperfections of the market and about the need to improve its information elements, but there was continued faith in the market as a self-regulating mechanism for informing and mediating the flow of human resources. The language of vocational education, for example, was heavily preoccupied with the notion of marketable skills.

Third, both the vocational education and the manpower programs, were focused mainly upon entry-level training. The emphasis was not merely upon entry-level skills, but also upon entry-level jobs. Much of the training, therefore, provided preparation for occupying the bottom rungs of occupational ladders and much of it, unfortunately, involved training for the shorter ladders rather than the longer ones. A high proportion of the training programs involved youth below the age of 22. The consequence, therefore, was a massive exercise in training young people to crowd each other off the bottom rungs of the nation's occupational ladders. This preoccupation with limited boundaries for training programs may have accentuated the problems of youth unemployment while attempting to alleviate them.

Finally, the legislation and the resultant programs from 1960 onward were overwhelmingly concerned with fitting individuals to jobs and almost totally unconcerned with fitting jobs to individuals. The issue here is not one of job enrichment or job satisfaction. It is one of creating job opportunities by approaches to part-time employment, revisions of job content to achieve higher productivity, or the development of entrepreneurial skills to match technical skills. The relationship of individuals to jobs has traditionally been seen as one in which the job is a given and the individual a pliant variable. The Manpower Development and Training Act, for example, led to a great deal of training and only a marginal amount of development.

The four influences mentioned in the foregoing paragraphs make up a large part of the "natural dynamic" or the "forces at work" in vocational education and manpower programs. Moreover, they do not operate independently as separate forces, but collectively in a combined way. To regard them as policies would be to elevate them to the status of deliberated options to rejected alternatives. They have no such status. In policy terms, they should probably exist as hypotheses to be tested. Yet they continue to operate as part of extant reality and as forces influencing the style and focus of the nation's training activities.

Principles Guiding the Structure of Delivery Systems

The principles guiding the structure of delivery systems for employment and training programs are those related mainly to organization, purpose, and standards. As with the legislative emphasis of the last several decades, these have not developed in response to an overarching policy framework; they have emerged as part of a natural dynamic arising from multiple forces over a period of time. It may be argued that it is the desirability of principles which justifies their existence. On the other hand, it may also be argued that it is their existence which justifies their desirability. Both arguments have certain merits, as will be seen in the discussion which follows.

Organization. America's organizational preference in vocational training programs is that they be institutionally based. The trend began before the Revolutionary War with the demise of craft guilds, a demise associated with the need for workers to have multiple capabilities rather than the single skills identified with guild membership. The preference for institutionally based programs was formalized by the land grant (Morrill Act) legislation of 1862, which institutionalized training programs whose counterparts in Europe were not given an institutional framework for an additional half-century. More recently the institutional preference has been demonstrated at every level of government--federal, state, and local--by enormous investments in equipment and buildings for secondary and postsecondary vocational education.

What is the depth of the commitment to institutional training? While there are no precise data on such investments, the total can be estimated to be between $25 and $30 billion in buildings and equipment alone. Institutional training is the nation's primary delivery system for vocational education, training, and employment.

Why has the nation declared its preference for the institutional approach? First, such an approach can respond to the needs of individuals as well as to the needs of industry. The opportunity for freedom of choice among various occupational ladders is a characteristic of institution-based education and training. Although often criticized for serving industry's need for obedient and pliant workers, institutional training has been conspicuously organized to insure that the needs of industry will not supersede the needs of individuals.[6] Second, institutional training has been a clear and unequivocal choice of organized labor. Labor representatives have free access to membership in the governing bodies in charge of institutional education and training. Industry training, the major alternative, does not offer the same access to membership on governing boards.

America's organizational preference in vocational education and training programs is also clearly on the side of public programs supported by tax levies. The preference is for training activities in which the individuals who pay the costs are not the direct beneficiaries. The alternative is industry-based training, a situation where industry as the bearer of costs is the direct beneficiary. Such programs are extremely important to the nation's total training endeavors. Often referred to as private training, they are private only in their direction and purpose. They are financed by tax deductions rather than by tax levies and are, therefore, a claim against the nation's public resources.

Why has the nation declared a preference for training programs supported by tax levies? For the same reason that a preference has been declared for institutional training, because elected boards of governance in charge of training programs with close links to industry have been regarded as preferable to training programs based solely on industry's needs. But there are other reasons. Small industries, those employing fewer than 50 persons, are not active in providing industry-based training except as they link with institutions providing vocational training.

Purpose. The employment and training purposes of vocational education are all related to various types of transitions. The transitions may be to other levels of training, to differing types of employment, or from one kind of occupational ladder to another. These transitions are accommodated most effectly if they are continuous, if there are no interruptions between levels of training or from school to work. It is claimed that the purposes of vocational education are diminished by discontinuity, a claim which needs reexamination and restudy. It is possible that the purposes of training would be best served if discontinuity were the norm rather than the problem.

Standards. Perhaps the most important principle related to vocational education is one related to standards. Institutional standards are established and implemented through procedures of accreditation with tests of accountability applied at federal and state levels. Program standards are established in specialized occupational areas by professional groups and also implemented through accreditation procedures. Professional standards are established by states, and implemented through procedures of certification and licensure.

Adherence to standards is even more extensive than can be described by institutional, program, or professional dimensions. There are specific standards established at the federal level for planning and evaluation. At the state level there are additional standards for review and approval of local programs. At the local level there are standards peculiar to the local scene, including standards of safety and health.

While standards for vocational education may be partial, or in some cases uncertain, the existence of numerous standards is indicative of an effort to demonstrate a principled approach to serving the public interest.

It is not sufficient, however, to point to the existence of numerous standards and to regard their existence, albeit laudable, as an unmixed blessing. It is useful to recall the famous quotation of the general in the Foreign Legion who said "We lost the war, but we didn't lower our standards." One cannot be sure that standards will lead to the anticipated success.

The most principled approach to standards is one that continuously reexamines their adequacy and is constantly alert to the need for them to be informed by review and inquiry. This, too, is a role accepted by the field of vocational education, as illustrated by the AVA's recent decision to make accreditation a more sharply focused professional responsibility.

Concepts Integral to Vocational Education's Role in Employment and Training

It would be possible to list and elaborate an exhaustive array of concepts which are important to vocational education's role in employment and training. Those addressed here constitute a minimum list, those which enter the daily discussions and decisions about such programs. They include the notion of what is basic in education, the concept of justice, and the concept of policies related to planning and implementation.

The concept of the basics includes the question of what is basic to education or to preparation for work. A "back to the basics" movement is a cyclical phenomenon in education. There are pendulum-type moves from one type of emphasis to another, each claiming to offer what is crucial, essential, or, to some degree, basic. Such cyclical phenomena are highlighted by events such as Sputnik, and highlighted even more by such programs as the "Right to Read" and the ease with which the educational community succumbs to the penchant for remediation. The inclusion of Adult Basic Education (ABE) in the Economic Opportunity Act in 1964 was an official recognition of the possibilities of remediation in "basic" skills. The claims of the Career Education movement have invariably dwelt on the hope that student performance in reading, language, and mathematics would be as good (or at least no worse) for students engaged in career education activities than for other students.

Instruction is regarded as basic when it has instrumental value, when it opens access routes to important goals. The question of what kind of instruction should be regarded as basic is simultaneously a question of the availability of student time. If student time were unlimited, there would be no need to consider the trade-offs between alternative topics of instruction. But student time is not unlimited, and trade-offs are necessary. Nor would the question of trade-offs be as important if all students completed secondary schools or postsecondary programs. Again, not all students do complete. Approximately 25 percent of students who enter the 5th grade do not complete the 12th. Of those who begin instructional programs at the postsecondary levels, more than half fail to complete or make significant alterations in career goals. What may be regarded as basic, or preferably, instrumental, may differ significantly between students or it may differ for the same student at different age levels.

It is not easy to decide on an appropriate designation of the educational "basics." No citizen or educator would argue for diminishing the importance of the usual skills of literacy, including reading, writing, and computing. While such skills are necessary, they are not sufficient to open access routes to even more important basics, namely, food, clothing, shelter, and security. The charge given to vocational education is to provide instruction leading to these access routes. For youths who are unemployed and unskilled, these basics have no trade-offs.

Justice is an overarching concept identified with all forms of vocational education and training. The processes by which jobs, status, and rewards are allocated or rationed to members of a society is a function of the society's interpretation and implementation of the concept of justice. The statutes and rewards related to education and jobs are, understandably, the most easily observed area for discrimination and other manifestations of inequality.

But justice is not a stable concept; it is subject to varying interpretations in different settings and under differing circumstances. It is not a destination, it is a journey into new territory with changing scenes. The most up-to-date interpretations of this journey are provided by John Rawls in A Theory of Justice (an equality argument) and by Robert Nozick in Anarchy, State and Utopia (a freedom argument).[8] Taken together, they offer the most articulate description of the concept of justice since the Federalist Papers. In its role in the nation's employment and training programs, vocational education has a special responsibility to the concept of justice in all of its interpretations which influence the nation's work force.

Finally, there is the important concept of policies related to planning. Omitted here will be the governance issues which preoccupied the hearings of the Vocational Educational Amendments of 1976 (P.L. 94-482). Emphasized will be the public policy considerations involving the distribution and governance of public resources in order to identify and develop the human resource needs of the nation's work force during the next decade. Through its authorizing legislation at the federal level and its accommodation at state levels, vocational education can now employ some powerful machinery for forecasting and planning manpower resources for the future. This machinery has collaborative linkages with other federal and state agencies and there are linkages with an elaborate network of local advisory councils.

It would be traditional to refer to this as a concept of planning. It would be incomplete merely to identify the urging which Congress gave to state boards of education to deal more effectively with issues of policy. The concept of policies related to planning is sufficiently unique to be identified as a new role and a special obligation to the nation's employment and training programs.

Present Response Capabilities of the Vocational Education Systems

On the national scene, vocational education is best known for its programs in school systems at the secondary level. At the state level and at many local levels it is best known for its programs at postsecondary and adult levels. The capabilities here discussed are mainly the latter.

Since its emergence on the national scene, vocational education's most well-known capability has been its responsiveness to national emergencies requiring rapid expansion of skilled manpower. Such emergencies have always been associated with preparation for war or defense. Such capabilities are rarely difficult to demonstrate. Ordinarily they require an expansion of current routines with a minimum of new procedures.

Second, vocational programs have also shown a capability for responding to the force of the employment market. The capability is greatest when the employment opportunities are close to the training site and when there are few barriers between the vocational instructor and the employer. The good instructor is invariably the best placement officer.

Third, vocational programs have a high capability for regional and community development. This feature of vocational programs is not well known or well publicized; it is not included in the data of required reporting. Yet there are many dramatic examples of programs that have generated business expansion and job creation. It is a capability of considerable present and potential significance.

There are a number of areas where the response capability of vocational education is modest or even low. Some of these will be mentioned in the next section.

Needed Changes

High youth unemployment and low economic growth are frustrating and demanding situations. Government programs created to address such problems are a continuing subject of debate. Vocational education and training programs are central to much of the debate.

Skill training programs for entry-level jobs have a demonstrated effectiveness. Continuity of such programs is a necessity, but they are not sufficient. They do not serve the entire client system, the unemployed as well as the employed work force of the nation. As mentioned earlier, skill training which is limited to entry-level jobs may only prepare individuals to crowd each other off the lower rungs of occupational ladders. It may serve only to alter the conditions of comparative advantage, resulting in the creation of an unemployed worker for every placement.

Needed changes require a reexamination of the assumptions and premises that surround all public employment and training programs. It may be necessary to focus on different segments of occupational ladders (the higher rungs), on worker productivity, or on the terms of trade for employment and growth.

The needed changes are not likely to be those which flow from grandiose designs framed in gimmick language or in the recreation of massive fads. They are more likely to be the application of decentralized creativity and invention--a change in microcosm, but on a grand scale. The machinery for such an opportunity is now available in the planning and policy provisions of federal legislation which links vocational education and CETA. The changes suggested below are offered for such a context.

Responding to new clients or new client systems. Human resource deficiencies within the nation's work force are not limited to the 15-22 age group or to the entry-level employment opportunities within the work force. Indeed, a focus on the human resource deficiencies of the entire work force may free-up the number of employment opportunities for young workers.

Building new capabilities. New capabilities are often generated by designing new configurations of well-known and successful activities. There are many of these in vocational education as well as in industry training. Cooperative education programs, worker sabbaticals, youth organization projects, entrepreneurial training--all of these have existed independently in various settings. Combinations of these are possible and available to those who have the courage to design new capabilities.

A focus on inquiry. The most seriously needed change is a focus on inquiry. Vocational education and training programs have functioned for many years as operating systems and not as inquiring systems. It is now necessary to do more than improve delivery systems, tinker with curricula, or coordinate competitive organizational styles. A focus on inquiry merely reflects the realization that problems will not go away by themselves. It would be a reversal of the trend away from inquiry during the past decade.

I conclude with an observation that may be familiar to careful observers of history. America no longer has a "holding tank" for its youth. In the late 1930's, the country created Civilian Conservation Corps camps to drain off its unemployed youth. In the early 1940's, World War II preoccupied youth. In the late 1940's and the early 1950's, the G.I. Bill of Rights served to absorb millions of youth in transition. In the late 1950's and the early 1960's, the Vietnam War became the holding tank for youth. In the 1970's, the nation finds itself without a holding tank. This is not to suggest that we need one; it is only to suggest that tradition has not left us well prepared to exist without one. Here is another reason why it is necessary to depart from tradition and to rely more on inquiry in addressing the nation's problems of employment and training.

NOTES

[1] This section of the presentation is adopted from an earlier policy paper prepared for the National Institute of Education.

[2] In many ways, the activism and social protest of the 1960's was behavior similar to that which occurred in the 1860's. Although overshadowed historically by the events of the Civil War, the decade of the 1860's was similarly filled with national issues involving training, education, and the distribution of justice.

[3] A study of presidential vetoes sheds light on the reappearance of legislation. The famous Morrill Act of 1859 was vetoed, for example, by President Buchanan; reintroduced by the Congress after the southern states had seceded from the Union, it was signed by President Lincoln in 1862.

[4] Interagency coordination and planning, an activity urged by Congress, was not renewed until the Vocational Education Amendments of 1976.

[5] A current counterpart to the JOBS program is the program effort mounted under the aegis of the National Alliance of Businessmen (NABS).

[6] In England the recent move away from training organized by Industrial Training Boards was intended to indicate more concern for the needs of individuals. Similar movements have occurred in other European countries.

[7] The Conference Board has recently published an analysis of the nation's industry-based training.

[8] A Theory of Justice (Harvard University Press, 1971) and Anarchy, State and Utopia (Basic Books, 1974).

VOCATIONAL EDUCATION IN RURAL AMERICA:

CURRENT PROBLEMS AND PROSPECTS

Jonathan P. Sher

Introduction

If ignorance is truly bliss, then what is currently known about rural vocational education should invoke feelings of unbridled joy. In this age of alleged "information overloads," the paucity of reliable data on vocational education in rural areas is nothing short of startling. Conflicting, and seemingly contradictory, impressions and assumptions are commonplace. Given the absence of any systematic investigations, speculation and random anecdotes have become primary data sources.

For example, one frequently encounters the claim (made most often by state and federal policymakers) that rural areas receive far more than their "fair share" of available resources for vocational education. Yet discussions with local educators and community leaders tend to yield the impression that rural students are being significantly shortchanged in the distribution of existing vocational education funds. Similarly, while rural vocational education is routinely assailed as being outdated, inappropriate, and sorely in need of reform, it is by no means unusual to encounter very favorable characterizations of existing rural facilities and programs. Some sources go out of their way to berate the quality of rural vocational education teachers while other, equally informed, sources are fulsome in their praise for these individuals.

Understanding both the validity and the persistence of these claims and counterclaims may not be as arduous a task as it seems at first glance. There are, in fact, two explanations which reveal these contradictions to be more apparent than real. They are (1) rural vocational education, like rural America as a whole, is so diverse that one can find evidence to support nearly any characterization;[1] and (2) it is inordinately difficult to distinguish major from minor trends and extraordinary circumstances from commonplace ones in the absence of reliable state and national statistics and research.

Thus, it is likely that there is at least some basis in fact for all of the conflicting assertions made about rural vocational education. Nevertheless, the historic problem has been one of discerning not only the extent to which any of these claimed characteristics actually are present in America's rural communities, but also one of identifying sets of circumstances which correlate with each of these characterizations. In other

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266

words, we need to know not only how many rural communities are served by excellent vocational education facilities, but also whether the presence of excellent facilities is a function of local wealth and preferences, state policies and practices, federal initiatives to aid the disadvantaged, or some combination thereof. This kind of genuine understanding of rural vocational education is all but nonexistent today.

Before discussing current problems and trends in rural vocational education with greater specificity, it is important to understand the context in which these efforts exist. Although there are some factors unique to vocational education activities, rural vocational education does tend to share both the constraints and the opportunities inherent in all public educational institutions in rural America. Thus, presenting an overview of America's rural communities and rural schools should be a useful exercise.

Identifying Rural Populations

We know in a general way that "rural" implies both small communities and low population density ratios. However, since "rural" is a relative term, all population and density-based definitions are inherently suggestive rather than definitive.

The two most popular definitions of rural America reflect this arbitrariness. Both are population-based and both define rural America in terms of what it is not rather than what it is. Thus, the Census Bureau carefully defines urban (essentially all places having a population of 2,500 or more), and then classifies all that remains as rural.[2] Similarly, the Census Bureau has established complex criteria for identifying Standard Metropolitan Statistical Areas (SMSAs), and then, by definition, designates everyone and every place not meeting the criteria as non-metropolitan.[3]

Although these two categorizations are the only ones commonly used to collect data on rural America, it must be understood that neither is consistent with prevailing impressions of rural life. For example, the Census definition of "rural" includes more than two million people living within the boundaries of metropolitan areas.[4] Thus, a residential enclave with a population of 2,000 located fifteen miles away from a city is "rural" in Census calculations, while a community of 2,600 people located hundreds of miles from any metropolitan area is considered to be "urban" by the Census Bureau. Likewise, the basic problem with the "non-metropolitan" definition is that it includes some places having up to 50,000 residents--a population concentration far higher than one normally thinks of rural.

This concern about definitions is more than academic. Depending upon the definition used, America's 1970 rural population ranged from 37.5 million to 65.1 million individuals.[5] This represented between 18.5 and 32 percent of the total United States population in 1970. Thus, it is important to be aware of the potential dimensions of America's rural constituency and the dramatic differences resulting from seemingly innocuous alterations in the definitions used.

One final note on definitions. Although they are equally arbitrary, density-based definitions of "rural" may, in some cases, be appropriate and useful to researchers and policymakers. Certainly, they illustrate some striking differences in settlement patterns and reveal the extent to which genuinely "wide open spaces" still exist in the United States, particularly in the western region. According to Census data, urban population density averaged 2,760 people per square mile (including a figure of 67,808 per square mile in Manhattan), while rural population density averaged 15 people per square mile.[6]

Still, aggregate national statistics do not adequately reflect the enormous variance in the size and significance of the rural population at the state level. For example, Pennsylvania has more than 3 million rural residents, while Nevada has less than 100,000. More than 67 percent of Vermont's population live in rural communities, but only 12.9 percent of Rhode Island's population is rural. Two states (Wyoming and Vermont) have no SMSAs at all, and 20 other states have more than half of their population in non-metropolitan areas. Yet there are twelve states in which the non-metropolitan population constitutes less than 20 percent of the state's total number of residents. California is an interesting case in that it has nearly 2 million rural residents (more than in 40 other states), yet less than 10 percent of its total population is in rural areas (making it the least rural of the fifty states).

Population density statistics also demonstrate the tremendous disparities existing among states. At the extremes, Alaska averages one citizen per square mile, while New Jersey has 953. As noted earlier, the western states have the lowest population density ratios, but there are 33 states which average less than one hundred people per square mile.

More important than these broad population figures is the fact that since 1970, rural America's population base has experienced a significant resurgence. As one of the nation's leading demographers, Calvin Beale, concluded:

"The vast rural-to-urban migration of people that was the common pattern of U.S. population movement in the decades after World War II has been halted and, on balance, even reversed. During 1970-73, non-metropolitan areas gained 4.2 percent in population compared to only 2.9 percent for metro areas."[7]

Beale goes on to state that:

> As might be expected [counties adjacent to metropolitan areas] have had the highest population growth since 1970 (4.7 percent) and have acquired about five-eighths of the total net in-movement into all non-metro counties. However, the more significant point

> is that nonadjacent counties have also increased more rapidly than metro counties (3.7 percent vs. 2.9 percent). Thus, the decentralization trend is not confined to metro sprawl. It affects non-metro counties well removed from metro influence. Indeed, the trend can be said especially to affect them.[8]

Thus, for the foreseeable future, rural America's existence as both a significant segment of the U.S. population and a vital sector of the nation's economy seems assured.

Current Status of Education in Rural Areas

Like rural America as a whole, rural schools and school districts are distinguished by their diversity. Despite increasing standardization, rural schools still tend to reflect the pluralism found among the rural communities they serve.

Perhaps the most surprising fact about non-metropolitan schools is the number of students who attend them. In 1975, there were more than 15 million children (ages 5 through 17) enrolled in non-metropolitan schools (including 13.6 million white children and 1.8 million black or other minority group children).[9] In other words, 32 percent of all children enrolled in public schools in the United States are enrolled in non-metropolitan schools.[10] In comparative terms, there are more students in non-metropolitan schools than there are in central city schools.[11] In fact, the total number of non-metropolitan students is greater than the total population of New York City, Los Angeles and Chicago combined.[12]

Depending upon the definition employed, "rural education" includes more than 39,000 schools distributed among nearly 12,000 independent local school districts.[13] Thus, it encompasses everything from a one-room schoolhouse in an Appalachian hollow to a western school district responsible for education within a several-hundred-square-mile-region. It includes both units with lots of students but very little money, and units with lots of money but very few students. The fastest-growing school districts in the nation are in rural areas, but so are the ones experiencing the most rapidly declining enrollments. Some rural schools are quite self-sufficient and would be considered excellent by nearly any standard, while others are woefully inadequate and desperately in need of assistance. As a consequence, treating rural schools and school districts as if they were a unified, monolithic entity would be a serious mistake. The "primacy of local circumstance" is as applicable to the formulation of rural educational policy as it is to rural communities in general.

Despite this caveat, it is clear that rural schools historically have shared several common problems. For example, reducing student nonenrollment and absenteeism, recruiting highly competent teachers and administrators, providing special education and other specialized services, securing needed capital and operating funds, altering the historic patterns of low achievement in school, and compensating for the inherent isolation and population sparsity of rural areas are all problems which have persistently plagued rural school and remain largely unsolved even today.

Nevertheless, it is inaccurate to portray rural schools strictly in negative terms. Among the very diverse rural systems are many rural schools which compare favorably in educational quality with their larger and wealthier urban and suburban counterparts. The broad statistics mask these successes and tend to divert researchers away from studying the characteristics of outstanding small schools.

Much of what is unique about rural schools and school districts defies quantitative analysis or statistical description. The slower pace and less pressured environment, the spirit of cooperation, the opportunities for leadership development, the less formal interactions among students, staff and parents, and other similar qualities which have long been associated with rural schools are not easily measured by the tools of educational research. This would be of little consequence were it not for the fact that researchers and policymakers have tended to discount that which they cannot measure. Thus, when rural communities opt for these "intangible" qualities (for example, by choosing to keep their community school instead of busing their children to a large consolidated school having a bigger library or more sophisticated equipment) they are often labeled as "backward" or "reactionary," rather than merely different.

Efforts to reform education (including vocational education) in sparsely populated areas must capitalize upon the strengths, as well as correct the deficiencies, of rural schools. Historically, reformers have either disparaged the advantages inherent in small rural community schools or have taken them for granted. As a result, these advantages have often remained as undeveloped potentials rather than fully utilized components of the school program.

Rural Vocational Education: Current Status

In addition to providing a context for examining the specific problems and potentials of rural vocational education, the preceding sections were intended to serve as a warning against making sweeping generalizations about this field. Refraining from stereotypes here is prudent, not simply because the heterogeneity of rural America recommends it, but, more importantly, because the previously noted absence of critical information about the characteristics and performance of America's rural vocational education system demands such restraint.

Any attempt to describe the current status of rural vocational education in the United States is hampered by the availability of only the most rudimentary statistics on the parameters and components of this system. For example, we simply do not know how many full and part-time students, how many faculty members, or how many institutions combine to make up our rural vocational education system. Similarly, there are no existing national data from which we can accurately compare the programs, facilities, and characteristics of rural vocational education institutions with those of their urban and suburban counterparts. Do rural teachers have salaries, backgrounds and training similar to those of metropolitan vocational education teachers? How do the programmatic offerings in rural and urban communities differ? Do rural programs exceed or lag behind the national average in placing graduates in jobs related to their training? How do vocational education programs in the rural South differ from those in rural New England?

Answering these questions with "hard evidence" (as opposed to speculating upon them with rigid opinions) is all but impossible at present. Nevertheless, it would be foolish to ignore the small amount of information which does exist on the nation's rural vocational education programs. Thus, using data generated by a 1972-73 survey conducted by the U.S. Office of Education, it would appear that the following characteristics can be attributed to rural vocational education in the U.S.[14]

In terms of students, the USOE study indicates that there were approximately 1.8 million rural students enrolled in vocational education programs in 1972-73.[15] This figure represents about 30 percent of all U.S. secondary school students enrolled in vocational education programs. Of this rural vocational education population, more than 350,000 (or approximately 20 percent) were members of minority groups.[16] The USOE study did not include any "rural" data on student socioeconomic status, placement, sex, age, or other key characteristics.

In terms of programs offered, the conventional wisdom has long held that rural vocational education programs consist almost entirely of courses in agriculture and nonoccupational home economics. For example, in a recent publication Ray Marshall asserted that "rural vocational education has been primarily concerned with training people for agricultural and homemaking and less in the rapidly growing rural nonfarm job categories."[17] However, if the 1972-73 USOE report is accurate, these opinions must now be revised.[18] As Table 1 indicates, there were nearly as many rural students enrolled in office/business and trade/industry programs (760,292) as there were in agriculture and home economics programs (832,027). However, there is no information given in these data as to regional differences, program content, or program distribution (i.e., do rural vocational education institutions tend to be fairly comprehensive or do they concentrate on one or two program areas?).

Why is so little known about rural vocational education? Why have nearly two million rural students become the "forgotten third"[19] of America's vocational education system?

Discussions with a variety of relevant sources yield a host of possible answers. However, three answers recurred with sufficient frequency to suggest that they may indeed be key factors in understanding the reasons behind the continuing paucity of reliable research on vocational education. They are:

Table 1

Secondary Level Enrollment in Vocational Education Classes, By Selected Program Area and Residence of Student: United States, 1972-73

Student Residence		Agriculture	Dist Educ	Health	Home Ec (Home)	Home Ec (DCCU)	Office/ Business	Tech Educ	Trade/ Industry	Row Totals
		Program Area								
Large city	No.	12,371	75,305	12,501	169,395	40,788	359,077	33,308	236.139	938,883
	%	1.9	22.0	16.7	11.0	15.5	22.1	13.7	18.1	15.6
Suburb of city	No.	19,334	60,447	9,621	248,064	26,205	262,062	64,981	164,956	855,670
	%	3.0	17.7	12.8	16.2	10.0	16.1	26.8	12.7	14.2
Small city	No.	212,767	146,416	35,929	676,361	118,060	608,747	95,029	511,402	2,404,712
	%	32.9	42.8	47.9	44.1	44.9	37.5	39.2	39.2	39.9
Rural area	No.	401,302	59,025	16,518	430,725	76,203	384,066	46,261	376,226	1,790,327
	%	62.0	17.3	22.0	28.1	29.0	23.6	19.1	28.9	29.7
No Answer	No.	1,710	889	451	8,699	1,654	11,230	2,932	14,903	42,468
	%	.3	.3	.6	.6	.6	.7	1.2	1.1	.7
Column totals	No.	647,485	342,082	75,020	1,533,244	262,909	1,625,182	242,512	1,303,627	6,032,060
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: U.S. Office of Education, Vocational Education: Characteristics of Students and Staff, 1972 (Washington, D.C.; U.S. Government Printing Office, 1974), Table 23A.

1. First-rate research on vocational education as a whole is relatively scarce. Although the lack of reliable statistical analyses may be most pronounced in the rural arena, this is a general problem in vocational education today. Thus, the huge rural data gaps may more properly be viewed as an extreme example of a common problem rather than as any kind of unique occurrence.

2. There is a good deal of confusion as to the composition of the rural vocational education system. The normal difficulties associated with identifying rural populations are exacerbated here by the high proportion of vocational schools and programs which draw their students, teachers, priorities, and resources from both urban and rural as well as metropolitan and non-metropolitan populations. Thus, as Table 2 indicates, nearly 30 percent of the "rural" vocational education students (approximately 340,000) live outside rural areas (including about 10,000 large city residents enrolled in rural vocational programs). Conversely, the majority of vocational education students who live in rural areas are enrolled in programs located outside those rural areas (including more than 23,000 rural students enrolled in large city vocational programs).

This problem extends to more indirect indicators as well. For instance, inferences made about rural vocational education students from data on program areas must be taken with a very large grain of salt. Vocational agriculture is a prime example: in 1972-73, 38 percent of the agriculture program enrollees were not from rural areas. Coupling this figure with the fact that only 22 percent of all rural vocational education students were enrolled in agricultural programs points up the speciousness of trying to extrapolate population characteristics from programmatic analyses.

3. There is very low demand for aggregate state and national statistics on rural vocational education. In the absence of any pressure to compile and maintain accurate statistics and detailed information on rural vocational education, state and federal officials have been content to ignore this population. Conversations with state-level statisticians, as well as staff members at the National Center for Educational Statistics, reveal that rural data have not routinely been collected and/or tabulated simply because there has never been any reason to bother with them. Local officials and educators have not expressed a need for such information. State and federal officials (who often tend to be urban-oriented) have not complained about the lack of this data. Moreover, rural vocational education has rarely been a priority item among either rural-oriented or education-oriented public interest groups. Though largely unintentional, this set of circumstances has had the net effect of masking widespread rural deficiencies and allowing solutions to remain at an adhoc case-by-case level.

Interest appears to be growing today, not only in rural education, but also in the relationships between education and work in our society.

Table 2

Secondary Level Enrollment in Vocational Education Classes, by Location of School and Residence of Student: United States, 1972-73

Student Residence		Location of school					
		Large city	Suburb of city	Small city	Rural area	No answer	Row totals
Large city	No.	833,906	61,206	26,296	9,858	7,618	938,883
	%	80.4	6.2	.9	.9	11.2	15.6
Suburb of city	No.	108,340	671,656	63,131	8,623	3,919	855,670
	%	10.4	68.3	2.3	.7	5.7	14.2
Small city	No.	62,001	166,261	1,815,745	321,303	39,402	2,404,712
	%	6.0	16.9	65.4	27.6	57.7	39.9
Rural area	No.	23,260	78,542	853,611	818,024	16,890	1,790,327
	%	2.2	8.0	30.7	70.3	24.8	29.7
No answer	No.	10,133	6,396	19,694	5,837	409	42,468
	%	1.0	.7	.7	.5	.6	.7
Column totals	No.	1,037,639	984,062	2,778,476	1,163,666	68,238	6,032,060
	%	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: U.S Office of Education, Vocational Education: Characteristics of Students and Staff, 1972 (Washington, D.C.: U.S. Government Printing Office, 1974), Table 24A.

Given these concerns, it seems plausible that rural vocational education will soon command (at the very least) a more concerted effort to understand the characteristics, programs, and policies which currently distinguish this area of inquiry.

Rural Vocational Education: Major Problem Areas

Whenever "hard evidence" is in short suppy, informed opinions are accorded additional credence. Thus, the best information about the critical issues facing rural vocational education today comes primarily from the impressionistic portrayals rendered by those educators, policymakers, students, employers, and other interested citizens who are actively involved with rural vocational education programs in their own community or state.

Accepting the opinions of these participant/observers as conclusive evidence would be almost as foolhardy as dismissing them out of hand. It must be remembered that the problems noted here are neither equally applicable to all communities nor equally severe in the communities where they do exist. However, the fact that these issues emerge over and over again in discussions of rural vocational education confirms their status as major concerns.

The problems besetting rural vocational education can be broken down into two categories: inherent and circumstantial. As a rule, the inherent problems are rooted in the nature of rural life and, consequently, tend to be rather intractable. Conversely, the circumstantial problems have grown largely out of poor assumptions, planning, or implementation, and thus are, at least in theory, far more amenable to the efforts of reformers.

In one way or another, all the inherent problems of rural vocational education spring from the most central fact of rural life: sparsity of population. Three of these sparsity-related problems stand out as being both reasonably widespread and serious.

1. Lack of access. Considerable progress has been made in this area during the past twenty years. Today, the majority of America's rural high school students do have access to some type of vocational education experince. Two basic delivery systems are common. Students in large, consolidated, comprehensive rural high schools generally receive vocational instruction right in these institutions. Students in smaller schools seeking vocational training commute full- or part-time either to a comprehensive high school or, more often, to a specifically-designated regional vocational educational facility.

Still, access remains a problem. In very remote or isolated rural areas, there are children who want and could profit from vocational education, for whom programs are not available. In communities fortunate enough to have excellent vocational programs and facilities, sexual, racial, and class discrimination in admissions are by no means unknown. Ironically, at the other end of the spectrum, rural communities with substandard vocational programs and facilities tend to enroll disproportionately high numbers of poor or minority group students in the vocational track.

A more common problem is that rural vocational programs are often severly limited in terms of the range of available offerings. Frequently, there are only two or three existing program areas and the course coverage even in these areas tends to be superficial. Thus, while access to "some kind" of vocational education exists, it is not necessarily access to the type or level of training needed.

Finally, it must be remembered that there is an enormous difference between access in theory and access in reality. Often, regional vocational centers will include a very large geographic area in their official description of their constituency. But the population they actually serve tends to be a much smaller group clustered in reasonably close physical proximity to the regional center. For the more remote rural students, simply getting to and from these regional units can be an arduous, expensive and enormously time-consuming endeavor. These hardships discourage all but the most tenacious rural students from completing (or even enrolling in) vocational training activities. Thus, as a rule, the more rural (i.e., geographically isolated) a student is, the less real access he/she has to meaningful vocational education programs.

2. Diseconomies. The major stumbling block to providing high quality rural vocational education programs (however defined) and alleviating access-related problems has been, and continues to be, financial. Vocational education, primarily because of the extraordinary capital expenditures required, has been an expensive venture everywhere. But in rural areas, the general problems of low enrollment and low per-pupil wealth combine to make urban-style comprehensive vocational education programs financially inaccessible. After all, it is very difficult for a rural community which can barely afford to provide children with a "basic education " to justify spending $50,000 for the equipment and materials needed in one vocational program area which will enroll only five students per year. If the concept of economies of scale is applicable anywhere in the field of rural education, it would have to be in vocational education (and special education).

These rural diseconomies exist even if one puts aside the notion of providing extensive vocational programs in each rural community. The most common alternative--busing students to regional centers--is anything but cheap in view of the high costs of transportation. Given rising energy costs, this solution may soon be prohibitively expensive. Other alternatives, such as apprenticeship programs or intensive short-term training at residential centers, have not been implemented enough to determine their financial consequences. But in any case, it is likely that the inherent diseconomies in this area will continue to be a formidable force to reckon with in the effort to improve rural vocational education.

3. Absence of supporting institutions. The last major inherent problem in rural vocational education lies in the fact that rural vocational education programs and institutions, unlike their urban and suburban counterparts, usually have to "go it alone." The network of postsecondary institutions, state and federal youth training and employment programs, and private vocational education efforts which exists in every metropolitan area is very rarely present in rural communities. This means that the full burden of aiding rural youth in the transition from school to work falls upon schools and school programs which are ill-equipped to cope with such demands.

In other words, if the school doesn't provide something, chances are it simply will not be provided at all. There are few rural equivalents of the youth training programs offered by the Urban League, the YMCA, or the OIC. Similarly, efforts to foster rural work experience or apprenticeship programs are crippled by the fact that there are so few businesses, organizations, and institutions in rural communities where students could even potentially be placed. Thus, rural vocational education reformers should strive to alter the present situation in which rural schools (with the least comprehensive programs) are saddled with the most comprehensive responsibilities for serving their constituencies.

Lack of access, diseconomies, absence of supporting institutions--these are the inherent problems faced by America's rural vocational education system. Together, they present more adversity than anyone would care to face. Unfortunately, however, these are not the only problems plaguing rural vocational education today. Most rural communities are also faced with a range of circumstantial problems which must be overcome before rural programs can reasonably be expected to be of long-term benefit to the students served.

A review of the literature suggests that the overall poor quality of rural vocational education is directly attributable to the following four circumstances: outdated and irrelevant programming, migration orientation, job-specific programs, and lack of work experience opportunities.[20] Each is described below.

1. Outdated and irrelevant programming. This is the most pervasive problem in rural vocational education today. In the past quarter-century, rural America has been subjected to a rash of major changes, including the rise of agri-business (which substituted capital for labor in farm enterprises); the mass exodus of rural people, particularly rural youth, to the cities; and the closing of millions of small farms. These changes have radically altered both the structure of the rural labor force and, consequently, the operative demands for rural manpower.[21] For example, in less than 20 years, the number of people employed on farms has dropped from 7.3 million to only 4.4 million in 1976.[22] Yet vocational agriculture has persisted (and in many areas been expanded) even in the face of these adverse farm employment trends. There is no doubt that vocational agriculture deserves continuing strong support in rural areas. However, serious

problems arise when vocational agriculture is the dominant (and occasionally, the sole) vocational opportunity offered to rural students. Continuing to emphasize a particular kind of training (for agriculture, mining, fishing, or any other field) because that is where the jobs used to be, or simply because that training "has always been offered," does a serious injustice to rural students.

2. Migration orientation. To try to rectify this obvious shortcoming in the rural vocational education strategy, some "progressive" educators proposed, and ultimately implemented, vocational programs aimed at equipping students with skills relevant to the urban labor market. The underlying assumption was that since rural youth are going to migrate anyway, schools should aid students in acquiring the skills necessary for success in an urban setting. Densley is instructive here:

> The majority of the rural students will ultimately seek urban jobs, therefore, curricular offerings must be broad enough to prepare rural youth for urban employment and urban life...Rural conditions are improving, but placement of rural youth in urban occupations has been and continues to be a necessity.[23]

This strategy was adopted with particular zeal by the regional vocational schools that emerged in the past decade. State education officials in Georgia, for example, proudly described a regional vocational high school in the middle of rural Georgia which focuses on training programmers and other computer personnel.[24] There is nothing wrong per se with training computer technicians. However, it must be remembered that rural youth trained in this field have no effective choice other than to migrate to the nearest big city. Rather, the problem with this strategy is twofold:

First, it is defeatist in its attitude about the plight of rural youth and rural communities. It takes outmigration, rural decay, and inadequate employment opportunities not only as current "givens," but also as long-term inevitabilities.[25] Having accepted this analysis, rural vocational educators feel justified in promoting a strategy which, by equipping youth with skills salable only in an urban job market, serves mainly to exacerbate all the current problems. The situation is reminiscent of the policies of former Agriculture Secretary Earl Butz, who predicted that small-farm decline and the loss of a million farmers by 1980 were "inevitable" and then proceeded to implement policies guaranteed to produce these results. As Hightower properly notes, "This is known as the 'inevitability' of a stacked deck."[26]

Second, for all its face validity, this strategy is not, in fact, pragmatic. Youthful migrants (no matter what skills they may possess) at present constitute little more than a pool of surplus labor in an already overburdened urban labor market. Unemployment rates for urban adults (skilled and unskilled) are enormous, yet they seem small when compared to the astronomical unemployment rates among urban youth.[27] Williamson's description is insightful:

> Youth problems in the labor market represent yet another major theme of public and professional concern over secondary schooling. Unfortunately, the most serious of these problems do not appear to be so much a reflection of the current economic downturn as manifestations of an apparent long-term deterioration in the relative position of youth in the national employment experience. In the past several years the youth unemployment rate has averaged between four and five times the adult rate. In 1930 unemployment of adolescents 14 to 19 years old was approximately one and one half times the national adult rate. In 1940, it was over two and a half times the national rate. By 1960, youth's position had slipped to over three times the adult average and, by 1967, there was a further deterioration to over four and a half times that rate...
>
> The chronic problems of youth in the labor market are not confined to a deteriorating employment experience. In recent years, the nation has learned the rude fact that it is indeed possible to satiate the economy's demand for educated workers. The prospect in the years ahead of massive youth underemployment (working at less than one's full production capacity) is most discouraging.[28]

A vocational education strategy geared toward producing rural migrants is not only bad policy, but also a cruel deception. Passing the buck to urban America is a far cry from solving the problem of unemployment among rural youth.

3. Job-specific programs. Those rural communities uncommitted to either outdated or migration-oriented programs have often embraced the notion of providing job-specific vocational education. The idea is simple. Analyze the relevant local or area labor market, determine anticipated manpower needs, consult with area employers, and then design vocational programs that will meet anticipated needs. While this in many respects is a perfectly reasonable strategy, its overall effectiveness is greatly hampered by two unpleasant realities:

   a. The relevant area labor market is often already saturated, and consequently, the openings for new competitors (young or old, specially trained or not) are marginal at best.

   b. Available job openings tend to be in the low-wage, dead-end exploitative enterprises attracted by conventional rural development programs. If one subscribes to the belief that half a loaf is better than none, this situation may be quite acceptable. Yet for those who believe that half a loaf is not sufficient, or who are concerned about the implications of transforming America's rural population into a "servant class" catering to the needs of urban tourists, resident professionals, and second-home owners, this strategy is plainly unsatisfactory.[29]

Even leaving pragmatic, economic judgements aside, there is ample ground for suspicion of this strategy on the grounds of undesirable social and psychological impacts. As Grubb and Lazerson insightfully conclude:

> Career education is not directed at resolving social problems, developing avenues of upward mobility, or making school and work more satisfying experiences. It is aimed instead at reducing expectations, limiting aspirations, and increasing commitments to the existing social structure. The replacement of hazy educational goals with "realistic" vocational goals, while appearing benevolent, actually strengthens the "cooling-out" function of schooling. College graduates are less satisfied, less controllable, and less productive in menial jobs than workers without higher education, and there are few non-menial jobs. Career education attempts to attenuate this dysfunction by bringing aspirations in line with the availability of high-skill jobs, by replacing high aspirations with lower ones, and by preparing students in ways that make continuation to higher education more difficult.[30]

Job-specific vocational education may make some sense in communities having first-rate employment opportunities, or at the very least, enough jobs to warrant being specific. Such is normally not the case in rural America today. Thus, this strategy's utility in the rural context is severly limited.

4. Lack of work experience opportunities. Work experience is an area that deserves far greater attention in the development of improved rural vocational education programs. A 1975 report by the U.S. Comptroller General indicates:

> It is generally acknowledged that inclusion of actual work experience in vocational education curriculum provides students with valuable real life exposure to work requirements and helps assure they receive training appropriate to employer needs. Such experience often can better prepare students for subsequent placement in jobs related to their training. The Congress has recognized this need and, in Part G, VEA specifically encouraged cooperative arrangements between schools and employers.[31]

Today, endorsement of the work experience concept is commonplace. For example, Marland asserts, "Neither students nor their teachers can learn what they need to know about the world of work only through a textbook."[32] The National Commission on the Reform of Secondary Education strongly recommends granting credit for work experience.[33] The new Coleman report on youth not only sanctions this concept, but urges an expansion of its application.[34] Even the U.S. Chamber of Commerce urges that a work experience component be a part of every high school student's program.[35]

However, in vocational education, endorsement and implementation are two very different and often unrelated matters. Despite all the laudatory rhetoric, painfully little use has actually been made of the work experience model in ongoing vocational education programs, especially rural programs. As the Comptroller General points out:

> U.S. Office of Education statistics for fiscal year 1973 show that about 508,000 students--four percent of the total enrollment in vocational education--were enrolled in cooperative programs.[36]

The absence of significant work-experience opportunities for rural vocational students (as well as regular or college-bound students) is, as noted earlier, partly attributable to the lack of available recipient organizations. In many rural areas, there are simply not enough businesses, industries, or government agencies in the community able to provide suitable work experiences for rural high school students. This, however, is only a partial explanation of a longstanding rural deficiency.

In the final analysis, outdated, migration-oriented, job-specific programs and the lack of meaningful work experience opportunities are only symptomatic of a more fundamental ill endemic to rural vocational education. Their failure is not simply the result of poor planning, poor program design, or poor implementation (though there has been a substantial amount of each). Rather it can accurately be attributed to a pervasive unwillingness, or inability, to confront the necessity of directly creating jobs as well as job applicants. To the extent that they have remained aloof from the business of rural economic development, vocational educators have greatly diminished their own potential for success. Yet it must also be understood that vocational educators have often been caught in the unenviable position of being damned if they do emphasize migration-oriented training (or vocational agriculture training or training geared to the local labor market) and damned if they don't. Unlike their counterparts in the cities and suburbs, rural vocational educators are often forced by a lack of resources (human and financial) to provide a far narrower range of training than they know is desirable. This situation means, in practice, that one kind of training usually must be emphasized to an inappropriate extent while other equally valuable types of training are either excluded or dealt with superficially.

Conclusions and Recommendations

Despite the rather bleak portrait of rural vocational education painted thus far, it would be a serious mistake to write off the reform of rural vocational education as a bad, or worthless, investment. Although significant changes are not likely to come either quickly or easily, there is every reason to believe that such changes can eventually be successfully implemented.

Over and over again, rural communities have demonstrated a capacity for survival and for overcoming seemingly insurmountable obstacles. Rural communities do not embrace reforms hastily, but once they are convinced of the reform's merits, small rural schools, as Rogers and Svenning note, "are in a unique position to gain community support for innovative programs.[37]

Nevertheless, it is apparent that major improvements in rural vocational education will come very slowly in the absence of extensive outside assistance. State and federal officials can play a critically important role in fostering better rural vocational education programs, if they choose to do so. At a minimum, there are two activities which should be given top priority by state and federal officials.

The first priority is to launch, at long last, a major data collection and analysis effort aimed at understanding the nature and characteristics of America's rural vocational education system. Obviously, information alone cannot solve the problems facing rural programs. However, it is equally obvious that these problems cannot be effectively resolved until their many variations are identified and understood with some degree of precision. We are not at such a point now, so this kind of national data generation is an excellent and appropriate place to start the reformation process.

The second immediate priority should be to conduct a detailed programmatic and economic analysis of possible alternatives for delivering vocational education services to rural populations. Two conclusions seem apparent here: (a) pouring new resources into doing "more of the same" in rural vocational education is not a productive strategy, and (b) there is no single solution which is applicable and useful throughout rural America's vocational education system. Consequently, there is a very real and pressing need to start thinking creatively about how we can provide rural students with the kind of vocational education and training they want and need. Once a range of potential alternatives has been identified or generated, attention should focus on examining the merits of each proposal in great detail as well as trying to determine the particular kinds of rural communities for which each alternative is most appropriate.

America's rural students deserve nothing less than our very best efforts to redress our nation's long history of responding inadequately to their need for first-rate vocational education. The two priorities noted here are first steps which must be taken.

NOTES

[1] The point is that rural America is far too heterogeneous and complex to be amenable to simplistic definitions or comfortable stereotypes. Remembering that fishing villages in Maines, coal company towns in Appalachia, farm communities in Iowa, Delta counties in Mississippi, recreation communities in Colorado, Indian reservations in South Dakota, small college towns in Minnesota, migrant settlements in Texas, retirement communities in Florida, and Alaskan native villages are all "rural" leaves one feeling less than sanguine about sweeping generalizations.

It should also be noted that in contrast to America's central cities, the heterogeneity of rural America exists primarily *between* communities rather *within* them. Internally, the population of most rural communities is actually quite homogenous. The exceptions here are in the southern and southwestern regions of the United States, where many rural communities are polarized along racial lines or by ethnic origin.

[2] The official U.S. Census Bureau definition of urban and rural in 1970 as follows:

> The urban population comprises all persons in (a) places of 2,500 inhabitants or more incorporated as cities, villages, boroughs (except Alaska), and towns (except in New England, New York, and Wisconsin), but excluding persons living in the rural portions of extended cities; (b) unincorporated places of 2,500 inhabitants or more; and (c) other territory, incorporated or unincorporated, included in urbanized areas. An urbanized area consists of a more central city, or twin cities, with a total of 50,000 inhabitants or more, together with contiguous, closely-settled territory (urban fringe). Certain incorporated places are designated as "extended cities" because they have one or more large portions with relatively low population density. These portions are classified as rural. In all definitions, the population not classified as urban constitutes the rural population.

[3] As of 1975 there were 266 SMAs in the United States. In 1973, these SMSAs had a total population of 152,473,000. For further information see U.S. Bureau of the Census, *Statistical Abstract of the United States, 1976* (Washington, D.C.: U.S. Government Printing Office, July 1976), Tables 14, 15, 16, 17, 18, and 21.

[4] In 1970 there were 16,412,000 individuals living in rural areas of the SMSAs. In the same year, there were 26,318,000 individuals living in urban areas outside the SMSAs. The figures here are from *Statistical Abstract of the United States, 1976*, Table 16.

[5] The variance in the size and composition of America's rural population caused by the use of alternative definitions is illustrated by Table 3.

Table 3

U.S. Rural Population, by Definition, 1970
(in millions)

Rural non-metropolitan[a]	37.5
Expanded rural non-metropolitan[b]	49.4
Census rural[c]	53.9
Census non-metropolitan[d]	63.8
Combination rural[e]	65.1

SOURCE: Adapted from U.S. Bureau of the Census, U.S.Census of Population, Vol. I; also, U.S. Bureau of the Census, Statistical Abstract of the United States, 1976, Section I.

[a] "All farms, open countryside and places of less than 2,500 residents outside SMSAs." This is the most restrictive definition (18.5% of total U.S. population in 1970).

[b] "All farms, open countryside and places of less than 10,000 residents outside SMSAs." This definition is used occasionally in Congressional legislation (24.9% of total U.S. population in 1970).

[c] "All farms, open countryside and places of less than 2,500 residents, both within and outside of SMSAs." This, in simplified terms, is the U.S. Census Bureau's definition (26.5% of total U.S. population in 1970).

[d] "All farms, open countryside and places of less than 50,000 residents outside SMSAs." This distinction (rather than urban-rural) is increasingly used for analytic purposes (31.4% of total U.S. population in 1970).

[e] "Census rural definition plus all non-metropolitan places between 2,500 and 10,000." Though rarely used now, this definition is both the most permissive and in many respects the most reasonable (35% of total U.S. population in 1970).

[6] Statistical Abstract of the United States, 1976. Tables 16 and 23.

[7] Calvin L. Beale, The Revival of Population Growth in Non-metropolitan America. (Washington, D.C.: U.S. Department of Agriculture, Economic Research Service, June 1975), p. 3.

[8] *Ibid*., p. 5.

[9] For further information see Statistical Abstract of the United States, 1976, Table 195.

[10] *Ibid*.

[11] *Ibid*.

[12] The total enrollment in non-metropolitan schools is 15.4 million persons. The total population of New York City, Los Angeles, and Chicago combined is approximately 13.5 million residents. See Statistical Abstract of the United States, 1976, Tables 195 and 23. Note: As Table 4 indicates, the rural youth population (under 25 years of age) is even greater, totalling over 25 million persons.

[13] U.S. Bureau of the Census, 1972 Census of Governments: Vol. I, Government Organization (Washington, D.C.: U.S. Government Printing Office, 1973), Table 2.

[14] U.S. Office of Education, Vocational Education: Characteristics of Students and Staff, 1972 (Washington, D.C.: U.S. Government Printing Office, 1974). One of the key drawbacks of these data lies in the fact that inclusion in the "rural" category was based solely on student self-identification. Consequently, they cannot be reliably correlated with data on rural communities drawn from any other source. Thus, while these USOE data are interesting and suggestive, it would be improper to consider them to be either definitive or wholly reliable.

[15] *Ibid*., Table 24A.

[16] *Ibid*., Table 22.

[17] Ray Marshall, "Problems of Rural Youth." In National Commission for Manpower Policy, From School to Work: Improving the Transition (Washington, D.C.: U.S. Government Printing Office, 1976), p. 246.

[18] U.S. Office of Education, Vocational Education: Characteristics of Students and Staff, 1972 (Washington, D.C.: U.S. Government Printing Office, 1974.

[19] Before endeavoring to answer these questions, it is important to remember that these rural students are "forgotten" only in terms of aggregate state and national information sources. After all, the fact that these 1.8 million rural students appear at all in the existing data is evidence

Table 4

Rural Youth Under 25 Years of Age in the United States By Region and Race or Ethnic Groups, 1970[a]

Numeric Distribution and Proportions Among Groups

Region	Total	White[b]	Black	Spanish heritage[b]	Native American
		Race or ethnic group			
North Central	7,400,329 (100.00)	7,287,110 (98.47)	63,237 (0.85)	57,314 (0.77)	43,683 (0.59)
North East	4,394,545 (100.00)	4,314,846 (98.18)	17,698 (0.40)	66,263 (1.50)	6,353 (0.14)
South	10,419,202 (100.00)	8,114,718 (77.88)	2,237,518 (21.47)	256,415 (2.46)	59,301 (0.56)
West	2,799,872 (100.00)	2,546,675 (90.95)	28,242 (1.00)	347,809 (12.42)	145,076 (5.18)
Total	25,013,948 (100.00)	22,263,349 (89.00)	2,346,695 (9.38)	727,801 (2.90)	254,413 (1.01)

SOURCES: U.S. Bureau of the Census, "1970 Census of Population Fourth Count Summary Tape," Processed at Texas A & M University Computer Center. U.S. Bureau of the Census, 1970 Census of Population: Subject Reports, Final Report PC(2)-1F, American Indians.

[a] This table was taken from a recent publication by Luis Jimenez, "The Ethnic Composition of Rural Youth in the United States: General Characteristics and Regional Comparisons." Departmental Information Report No. 73-3, Texas Agricultural Experiment Station, Prairie View A & M University, Prairie View, Texas. Percentages are shown in parentheses.

[b] Since most persons of Spanish heritage are also counted in the White category, there is double counting; the sum of the groups will be greater than the total. A smaller number of Spanish heritage persons are also counted as black.

that they are already enrolled in some kind of vocational program. The genuinely forgotten rural students are those who either want or need a vocational education program, yet are not (for a variety of reasons noted later) currently enrolled in such programs.

[20] For a good summary of the literature, see B. E. Griessman and K. G. Densley, *Review and Synthesis of Research on Vocational Education in Rural Areas*, ERIC Clearinghouse on Rural Education and Small Schools and ERIC Clearinghouse on Vocational and Technical Education, December 1969. Other useful documents include: Laure M. Sharp, "Vocational Education for Disadvantaged Groups," in Sommers and Little, *Vocational Education: Today and Tomorrow* (Madison: University of Wisconsin, 1971); and Earl Carpenter and John Rodgers, *Review and Synthesis of Research in Agricultural Education*, ERIC Clearinghouse on Vocational and Technical Education, 1970. For further sources, see Barry Stein, *The Biggest Little Conglomerate in the World: Community Economic Development in Kentucky* (Cambridge, Mass.: Center for Community Economic Development, 1973).

[21] See especially Ray Marshall and Lamond Godwin, *Cooperatives and Rural Poverty in the South* (Baltimore, Md.: Johns Hopkins Press, 1971).

[22] U.S. Department of Agriculture, *Agricultural Statistics, 1977* (Washington, D.C.: U.S. Government Printing Office, 1978), Table 605.

[23] Kenneth Densley, in Griessman and Densley, *Review and Synthesis*, p. 44. As a reference for these statements, Densley cites the Advisory Council on Vocational Education, *Vocational Education: The Bridge Between Man and His Work* (Washington, D.C.: U.S. Government Printing Office, 1968), and L. Burchinal, A. Haller, and P. Taves, *Career Choices of Rural Youth in a Changing Society* (Minneapolis: University of Minnesota, 1962).

[24] Based on author's interview with Oscar Joiner, Associate Commissioner of Education, State of Georgia, 1971.

[25] Clay Cochran (director of the Rural Housing Alliance) labels this kind of assumption as "metropollyana," which he defines as "the belief, usually tacit, that sooner or later all of the people will move to the big city and live happily ever after." (As quoted in *Toward a Platform for Rural America, Report on the First National Conference on Rural America* (Washington, D.C.: Rural Housing Alliance and Rural America, Inc. 1975).

[26] Jim Hightower, *Food Farmers, Corporations, Earl Butz...and You* (Washington, D.C.: Agribusiness Accountability Project, 1974).

[27] For example, according to the latest Bureau of Labor Statistics estimates, unemployment among ghetto youth (a category in which rural migrants commonly find themselves) ranges as high as 75 percent in many metropolitan areas.

[28] John N. Williamson, "The Quest for Alternative Routes to Adulthood" (unpublished paper, National Institute of Education, 1975) p. 6. Williamson cites the work of I. Berg, Education and Jobs, and Harold Goldstein, "Youth in the Labor Market: Trends in Employment and Unemployment," in The Transition from School to Work.

[29] That this "country gentleman--servant class" split has indeed begun is attested to by James Branscome and Peggy Matthews, "Selling the Mountains," as follows: "The developers' intrusions penetrate all levels of mountain society. Mountain women become summer maids, mountain farmers become caddies, mountain politicians become lackies, and a whole style of life begins to change." Southern Exposure, 2, no. 2 (Fall, 1974), 123.

[30] W. Norton Grubb and Marvin Lazerson, "Rally 'Round the Workplace: Continuities and Fallacies in Career Education," Harvard Educational Review 45 (1975), 473.

[31] Comptroller General of the United States, General Accounting Office, What Is the Role of Federal Assistance for Vocational Education? A Report to the Congress (Washington, D.C.: U.S. Government Printing Office, 1975, p. 77.

[32] Sidney P. Marland, Career Education: A Proposal for Reform (New York: McGraw-Hill, 1974), p. 240.

[33] The National Commission on the Reform of Secondary Education, The Reform of Secondary Education (New York: McGraw-Hill, 1973), p. 60.

[34] James S. Coleman, Youth: Transition to Adulthood, Report of the Panel on Youth of the President's Science Advisory Committee (Washington, D.C.: U.S. Government Printing Office, 1974).

[35] U.S. Chamber of Commerce, Career Education and the Business Man (Washington, D.C.: U.S. Government Printing Office, 1973).

[36] Comptroller General of the United States, What is the Role of Federal Assistance for Vocational Education? p. 77.

[37] Everett Rogers and Lynne Svennerg, "The Dilemma of Small Schools," Unpublished manuscript, 1972, pp. 2-3.

RACE AND SEX COMPLIANCE ISSUES IN VOCATIONAL EDUCATION

Phyllis McClure

This paper discusses the application of federal civil rights statutes to the policies and practices of vocational schools which have a discriminatory effect on minority and female students. Vocational training is perpetuating the racial and sexual stratification in the labor market. Women and minorities are overrepresented in courses leading to the less-skilled, lower-paying jobs. It is the paper's thesis that this condition is due not just to student choice but to discriminatory barriers which could be eliminated if civil rights laws were enforced by federal and state officials.

Introduction

The year 1977 marks the 60th anniversary of federal financial assistance to vocational education. It began with the Smith-Hughes Act of 1917, which provided for the promotion of vocational preparation at the secondary level in agriculture, home economics, and trades and industries, as well as the preparation of teachers in these subjects. The Act established a Federal Board of Vocational Education and required states to designate a state board which would submit plans in conformance with standards imposed by the Federal Board. Federal funds were appropriated for the three different subjects. Expenditures for vocational agriculture were distributed on the basis of the states' rural population; funds for trades and industries and home economics were based on the urban population; and teacher training money was distributed on the basis of the total population.

Between World War I and World War II, Congress passed three supplementary vocational education acts[1] which increased the federal contribution, extended federally subsidized vocational education to U.S. Territories, Alaska, and the District of Columbia, and enlarged the program to include distributive occupations. In the 17 Southern and Border states that operated separate schools for blacks and whites, racially separate vocational programs were maintained. Then in the 1960's federal support for vocational education was substantially expanded and modernized to respond to the economic, technological, and demographic changes that had swept postwar America. The high level of unemployment, especially among young people and minorities, was a principal motivating factor behind the new concepts embodied in the Vocational Education Act of 1963. That law redirected vocational education away from training in a few selected occupational categories to an emphasis on preparing both secondary and postsecondary students for their place in the

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world of work, regardless of occupation. Federal law for the first time recognized that the special needs of some students--those with academic, socioeconomic or other handicaps--prevented them from succeeding in regular vocational education programs. In another radical departure from the old legislation, the 1963 Act authorized federal funds for the construction of area vocational schools, for various ancillary services and activities, for research, for work-study programs, and for the construction and operation of residential vocational schools.

The 1968 amendments built upon and reinforced the new directions of the Vocational Education Act of 1963. Eight years later, Congress again enacted significant amendments to federal vocational education legislation. The 1976 law requires states to give priority in the distribution of federal funds to economically depressed areas with high rates of unemployment and to programs which are designed to meet new and emerging manpower needs and job opportunities. The Vocational Education Amendments of 1976 recognized for the first time the pervasive sex discrimination in vocational education and included numerous mandatory provisions for eliminating sex bias and sex stereotyping in all federally assisted vocational education.

While the legislation has changed dramatically, vocational training for minorities and women has changed little. Vocational education, historically and presently, reinforces and perpetuates not only the prevailing stereotypes as to the socially acceptable occupations for women and minorities, but also the race and sex discrimination in the labor market fostered by employer and union practices. Jobs for which women and minorities are trained in vocational schools are still the lowest paid, the most menial, the least skilled, and the most restrictive of upward employment mobility. What is worse, a quarter of all secondary vocational students are being trained as homemakers, which gives them no skills for gainful employment.[2] If students in vocational guidance and industrial arts are included, somewhat more than a quarter of all secondary vocational school students are not being taught employable skills.

Vocational schools prepare minorities and women for their place in the economic and social order. Evidence that this is as true in the 1970's as it was in the last century is presented here and elsewhere in this paper. Vocational training has historically been an acceptable form of education for blacks. Not only did it seem to be the training best suited to the occupational possibilities of slaves freed immediately after the Civil War, but it was also less expensive. Agricultural and vocational training offered at Tuskegee and Hampton Institutes enabled students to contribute to their own maintenance as well as to the support of their school by the construction of many of its buildings. After the Industrial Revolution came to the Old Confederacy, Negroes skilled in the old handicrafts--carpenters, masons, blacksmiths, and shoemakers--were no longer in demand. Skilled jobs were reserved for whites. Negro schools prepared girls for domestic service and trained boys in the rapidly disappearing handicrafts. Negro postsecondary institutions, such as Hampton and Tuskegee, existed almost solely for the purpose of training teachers for the lower schools rather than for the demands of modern industry.[3]

During the 60 years of federal vocational education legislation, the federal government has subsidized vocational education programs which have limited the access of blacks to the full range of available training opportunities. In the 1934-35 school year under the Smith-Hughes Act, there were 260,826 students enrolled in federally assisted vocational courses in the states that maintained racially separate schools. Although Negroes constituted 21% of the population of these states, they accounted for only 16% of the vocational course enrollment and received only 10% of the funds. White pupils were evenly divided among the three types of programs: 36% in agriculture, 34% in home economics, and 30% in trade and industry. But the distribution of Negro pupils was much different: 55% were enrolled in vocational agriculture, 29% in home economics, and 16% in trade and industry.[4] In none of the three programs supported by the Smith-Hughes Act did Negroes have access to vocational training equal to what an equitable distribution would have afforded them. This was particularly so in trade and industry. Despite discrimination against Negroes in the skilled and semi-skilled trades, the access provided Negroes in trade courses did not even approximate the proportion of Negroes to the total number of skilled and semi-skilled workers in the states where racially dual vocational programs were maintained.[5]

The distribution of federal vocational education funds was also racially inequitable. In the states maintaining racially separate schools in 1934-35, Negroes received 12% of federal funds for vocational agriculture although they constituted 24% of the rural population; 9% of the expenditure for home economics although they constituted 21% of the total population; and only 5% of the money for trades and industry programs although they constituted 17% of the urban population.[6] As a consequence, the small share of federal funds which was allocated to Negro vocational training was predominantly devoted to vocational agriculture and home economics, i.e., to farming and the domestic service occupations to which blacks have been relegated. E. Franklin Frazier charged that "the United States Office of Education has been responsible for permitting the opposition of southern whites to technical training for Negroes to determine the distribution of federal funds for the vocational education of Negroes."[7]

Only in relatively recent times has discrimination against minorities and women by recipients of federal financial assistance been prohibited. The same Congress that enacted the Vocational Education Act of 1963 also passed the Civil Rights Act of 1964, Title VI of which provides:

> No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.[8]

In 1972, discrimination on the grounds of sex by recipients of federal education funds became illegal. Title IX of the Education Amendments of 1972 provides:

> No person in the United States shall on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance.[9]

Responsibility for enforcing both of these statutes has been lodged with the Office for Civil Rights of the Department of Health, Education, and Welfare. Administrative enforcement of Title VI, together with judicial enforcement in suits brought by the U.S. Government and private plaintiffs, have substantially, although not completely, eliminated the de jure system of racially separate schools in the 17 Southern and Border states. Remnants of the dual system, including vocational schools, remain today. Title IX enforcement is only in its infancy. The final implementing regulations did not become effective until July 1975, three years after Title IX was enacted.

Both Title VI and Title IX have far-reaching potential for eradicating race and sex discrimination in vocational schools. All vocational schools, whether public or private, are reached by federal nondiscrimination statutes if they receive any type of federal subsidy. The problem is, however, that there has been virtually no enforcement of these statutes as applied to vocational education. The Office for Civil Rights (OCR) did not issue any interpretation of the basic Title VI regulations or any compliance policies which are directly applicable to vocational education until required to do so by court order. Data collection, compliance reviews, and complaint investigations in the area of vocational education have been so deficient that even the most suspect discriminatory practices have not been found to be illegal.[10]

Under Title IX, the Office for Civil Rights has developed and issued compliance policies applicable to sex discrimination in vocational schools.[11] They specifically address admission, recruitment, counseling, job placement, employment, and program segregation practices. Vocational school officials are far better advised as to what steps must be taken to comply with Title IX than they are with respect to Title VI. There are no comparable compliance policies for Title VI.

The lack of Title VI and Title IX enforcement, including the area of vocational education, has required private plaintiffs to initiate litigation against the Department of Health, Education, and Welfare seeking to have these federal statutes enforced.[12]

In the Adams v. Califano case, the District Court for the District of Columbia ordered OCR in 1973 "to implement without unreasonable delay an enforcement program adequate to secure Title VI compliance with respect to vocational and other schools administered or operated by State Departments of Education sufficient to assure their compliance with Title VI, including reporting and on-site reviews." OCR subsequently conducted a survey in 1974 of 1,507 area vocational schools. Based on 1,000 responses, OCR found that 67 schools disclosed immediate compliance problems. All but three were totally ignored. OCR's few compliance reviews and complaint investigations uncovered (1) serious disproportion of minority faculty and administrators, (2) racially and sexually identifiable vocational schools and course offerings, (3) evidence of racial gerrymandering of vocational school districts, (4) vocational school admission practices which had a racially adverse impact, (5) the almost total absence of minorities and women in apprentice programs conducted in vocational schools. With one exception, OCR took no steps to enforce the law.

In May of 1977 plaintiffs in Adams filed a Motion for Further Relief which asserted that HEW had "contemptuously defied" the 1973 Order with respect to state-operated special-purpose and vocational schools. The challenge to OCR's failure to enforce civil rights statutes culminated in a consent decree in December 1977 which requires the agency to develop policies applicable to vocational schools, to conduct a specified number of compliance reviews, and to conduct a nationwide civil rights survey of vocational schools in order to identify schools that may potentially be violating the law.

The Office for Civil Rights is not the only part of the Department of Health, Education,and Welfare which has responsibility for assuring nondiscrimination in vocational education programs receiving federal financial assistance. In response to Congressional criticism of its lack of monitoring and enforcement, the Bureau of Occupational and Adult Education in the Office of Education in 1976 and 1977 undertook reviews of state vocational education departments, called Management Evaluation Reviews for Compliance (MERCs). Late in the design of the MERCs, the Bureau decided to include some Title IX questions. However, the Title IX component of the MERCs is limited primarily to employment practices of state vocational education departments, although one question is directed at sexually-based admissions requirements to vocational courses. The MERCs as presently constituted do not examine the state agency's responsibility for insuring compliance with Title IX in either state-operated or locally administered vocational schools. Noticeably absent from the Bureau's MERCs are any questions related to race. No questions covering Title IX compliance are asked. The Bureau of Occupational and Adult Education is oblivious to the issue of racial discrimination in vocational education.

This paper is an attempt to outline the major Title VI and Title IX compliance issues in vocational education which must be addressed by the civil rights enforcement agency (OCR), by the program operating agency (OE/BOAE), and by the National Institute of Education's vocational education study. It does not purport to say which vocational school policies and practices do or do not constitute a violation of Title VI or Title IX. Rather, the paper's purpose is (1) to identify the evidence regarding the participation, or lack thereof, of minority[13] and women students and staff in vocational schools; (2) to define the compliance issues which arise from the extent of minority and female participation in vocational education; and (3) to offer suggestions for research and data collection on race and sex compliance issues which ought to be addressed by the National Institute of Education in its Congressionally mandated study of vocational education programs.

Access to Vocational Education

To what extent do minorities and women have access to vocational schools, particularly those which offer high-quality, diversified programs that prepare their students for skilled and well-paid employment? The answer to that question is that most black and female students do not have equal access to the best vocational schools nor to a full range of programs. The barriers are multiple. They include the location of schools, the creation of vocational school districts, racial gerrymandering, dual attendance zones, segregated branches, program differentiation, and admissions criteria. The factors which determine what kinds of students have access to which types of schools are variously determined by financial considerations, state law or state school board policy, school district wealth, local school board or administrative decisions, and educational practices. When any one or combination of these factors has the effect of adversely limiting access to black or female students, the result is a denial of equal educational opportunity.

Geographic location of schools and districts. One of the more common barriers preventing the access of black students to vocational education is the location of newer and more modern facilities outside of urban areas with high concentrations of nonwhite population. Federal assistance for vocational school construction has fostered the growth of area vocational schools operated by consortia of suburban districts. The creation of regional vocational school districts has often duplicated city/suburban attendance patterns.

The Advisory Council on Vocational Education reported in 1968 that in the three years after the effective date of the Vocational Education Act of 1963, 45 states had funded 689 construction projects. In the years 1965 and 1966, 72 projects were identified as specialized high schools, 181 as departments of regular high schools, 113 as technical or vocational schools, and 77 as departments of postsecondary schools. A major limitation, the Council said, was "that large cities tended to be shorted in the allocation of construction funds relative to their critical need for facilities."[14] By the mid-1970's, the number of federally assisted area vocational schools had increased to more than 2,000.[15]

The Office of Education reported that in the 1972-73 school year, 47% of the secondary vocational education classes were located in small cities, 22% were in rural areas, and 16% were in large cities. Of the postsecondary classes offered by secondary districts, 41% were located in small cities, 27% were located in the suburbs of large cities, and 12% were located in large cities.[16]

More recently, the Massachusetts Advisory Council on Vocational-Technical Education conducted a study of minority and female access to vocational schools in the Boston and Springfield Metropolitan Areas. The Council found that 36% of all schools in these areas reflected a significant difference between the proportion of nonwhite students in their service area. Schools with significantly higher proportions of nonwhites were located in Boston and Cambridge, while three of the eight regional vocational-technical schools had significantly lower proportions of nonwhite students. Urban students in the Boston area, the Council concluded, do not have equal access to newer vocational schools and more varied skills programs compared to suburban students. The municipal schools to which urban students have access are generally older, spend less per pupil, and offer fewer programs than regional vocational schools.[17]

Public school vocational enrollment at the secondary level in central cities is largely confined to comprehensive high schools with vocational departments, although high schools specializing in vocational and technical programs do exist. The vocational courses offered in these comprehensive high schools are typically the traditional programs such as auto mechanics, home economics, cosmetology, or wood shop, which produce the least saleable skills or prepare students for employment where there is the least demand. Proprietary schools offering specialized technical training are also found in large cities, but tuition costs would prohibit attendance by minority youth, a large proportion of whom are unemployed. Even if suburban vocational schools admitted city students, the difficulty and cost of commuting effectively limits their access to high quality programs and thus to good-paying jobs.

While it is true that the enormous amounts of matching funds required for construction in cities may have deterred the building of new vocational-technical schools, financial considerations are not the only reason that minorities have been denied access to good vocational preparation. School systems have created regional vocational school districts which have excluded cities and even systems with concentrations of minority students. These districts are either established pursuant to state law or approved by state education agencies which, as recipients of federal funds, are subject to Title VI.

The Office for Civil Rights uncovered an example of separate and unequal vocational schools during its 1973 review in the greater Harrisburg (Pennsylvania) area.[18] The Harrisburg-Steelton-Highspire area vocational school was established in 1967 to serve the city of Harrisburg (60% black enrollment) and the Steelton-Highspire School District(26% black). Those two school systems had the highest black proportion in the metropolitan area. In 1965 the Dauphin County area vocational school district was created to serve six school districts surrounding Harrisburg and Steelton-Highspire. The combined enrollment in these six districts was 2.5% black. The Dauphin area vocational school's black enrollment reflected the proportion of black students in the sending schools. Black enrollment at the Harrisburg-Steelton-Highspire school was 5% higher than the black proportion in its sending schools.

The Dauphin school was located in one new and modern building. Harrisburg's vocational facilities were scattered throughout the city. Dauphin offered several programs which Harrisburg did not: chemical technology, scientific data processing, air conditioning and refrigeration, commercial art, textile and apparel trades, and carpenter and machinist apprenticeship classes. A state official told OCR that he suspected that the reason why Harrisburg and Steelton-Highspire were not included in the regional consortium was that white county residents did not want their children attending a school with a high black enrollment.

The federal government has undoubtedly contributed to the creation of a system of separate and unequal vocational schools in America's urban districts. There exists, however, no nationally available information that this is so. Between 1965 and 1973 approximately 16% of the basic federal vocational education grants to states was spent on school construction.[19] The Office of Education gathers figures annually on the amount of federal dollars expended for vocational school construction,[20] but it does not collect race or sex enrollment data on these federally assisted projects.[21] The Office of Education does not require state departments of vocational education to conduct an analysis of the racial impact of proposed construction or renovation so that OCR could determine whether a Title VI violation exists. Such a finding should immediately result in suspending federal money.[22]

Segregation within school districts. Within a single school district, the creation of dual attendance zones, separate branches, and program differentiation has the effect of denying access to minorities and women. Although some of these practices are remnants of the *de jure* system of racial segregation in Southern states, there is evidence that they are a Northern phenomenon as well.The 1974 OCR survey of area vocational schools in Louisiana documents that there are 15 parishes each of which is served by two or more vocational schools which still retain their racial identifiability from the days of legal segregation. Boston Trade High School has a 72.5% nonwhite enrollment, while the Boston Technical High School is 32.8% nonwhite. The tenth through twelfth grade population from which these two schools draw their students is about 40% nonwhite.[23] Philadelphia has three area vocational schools which have service areas ranging from 33% to 65% nonwhite. The three schools have, respectively, a 25%, 87%, and 93% black enrollment.

An Office for Civil Rights review of the Augusta (Georgia) area vocational school found that the school had two branches, one 85% white with a nearly all-white faculty and one 70% black with a two-thirds black faculty. Five courses were duplicated at the two branches. A third branch housed health and nursing courses which were almost exclusively female.[24]

The General Accounting Office found a secondary area vocational school that located all its clerical, health, and cosmetology programs in one building and all its other courses in an adjacent building. The female students interviewed by GAO said that the courses they were taking did not necessarily coincide with what they hoped to do later in life but that their training choices were limited because they were not allowed to go into the "boys" building.[25] Program differentiation between traditionally male and traditionally female courses not only creates sexually segregated schools,[26] but it also restricts the access of women to the type of training that leads to higher paying jobs.

Fifteen of the 17 municipal schools in the Boston area had 20% or fewer female students. One had a female enrollment in the 31-40% range. One school was 77.6% female.[27] Seven of the eight Boston area regional vocational-technical schools enrolled 30% or fewer women. The eighth school was 61% female, and 87% of its female students were enrolled in two programs--home economics and office occupations.

Of the eight Springfield, Massachusetts area vocational schools, seven had female enrollments of less than 40%. One, the Springfield High School of Commerce, was 76.3% female because it offered typing, stenography, office practice, business management, data processing, bookkeeping, and business mathematics. Springfield Technical High School, one of the two other vocational schools serving students in the city, offered a college preparatory program and a technical program which included mechanical drawing, architectural drawing, woodworking, graphic arts, printing, auto shop, and machine shop.[28]

Program differentiation also occurs between majority white and majority black schools. The courses which train for higher paying jobs are offered in predominantly white schools. An Office for Civil Rights analysis of Alabama vocational schools shows that there is a correlation between the racial composition of state-operated schools in three major cities and the presence of an air conditioning program (See Table 1).[29]

TABLE 1

Presence of Air Conditioning Program in Vocational Schools

Schools Offering an Air Conditioning Program		
School	City	% Black
S. W. State	Mobile	21
Shelton State	Tuscaloosa	21
Jefferson State	Birmingham	13
Schools Not Offering an Air Conditioning Program		
School	City	% Black
Carver State	Mobile	84
Tuscaloosa State	Tuscaloosa	96
Lawson State	Birmingham	99

SOURCE: Office for Civil Rights

Admission criteria. Vocational schools are often thought of as open-enrollment institutions. That is far from the case, especially in the better vocational schools with the more sophisticated programs. A host of admissions criteria confront students who seek vocational preparation. They include: (1) previous academic record, (2) school attendance records, (3) a record of suspension or other disciplinary acts, (4) I.Q. tests, (5) aptitude test performance, (6) vocational interest inventories, (7) a high school diploma or its equivalent, (8) union apprenticeship, (9) inquiries concerning marital status, dependents, and financial support, (10) pregnancy and (11) course prerequisites. A few criteria are sometimes required for state licensure and are therefore out of the control of school officials. Some are required only for specific programs. For applicants for traditionally female courses, inquiries about their marital status, dependents, and financial support, are outright illegal under Title IX.[30] The problem with such criteria as academic, attendance, and disciplinary records, and I.Q. and aptitude test scores, is that they have never been validated for successful completion of vocational training. Where any of these criteria have a racially or sexually adverse impact on vocational school admissions, the result is to deny access to minorities and women.

In many districts, minority students are disproportionately suspended and expelled from school.[31] Minority students do not perform as well on standardized achievement and I.Q. tests. Not only will these criteria have a racially adverse impact, they do not necessarily predict a student's deportment in a vocational school or his or her ability to acquire skills. The very lack of motivation which is said to account for poor attendance, discipline, and achievement may be reversed by the opportunity to learn skills which will lead to gainful employment.

The General Aptitude Test Battery (GATB), developed by the Department of Labor for use by state employment services, is one of several tests used in vocational schools. A nongovernmental user of the test must sign a Release Agreement Form which includes a statement that the GATB will be used only in counseling. The counseling role of the GATB, however, precludes its use as an admission requirement, a priority assignment device for a program within a school, or as a screening device for entry into specific courses. As a tool for vocational counseling and placement, as opposed to the placement of trained applicants, the use of the GATB has been called into question:

> USTES (United States Training and Employment Service/Department of Labor) has presented no direct evidence to indicate that individuals with high test scores on a given test can learn to do any job better than individuals with low scores. In the absence of evidence to the contrary, the GATB subtests must be interpreted as measures of current status and not ability to learn.[32]

Once students are admitted, there may be other tests and prerequisites required for course placement. Excess demand for the most popular courses may result in students being required to demonstrate particular interest and ability or to have the recommendation of a teacher or counselor.

299

A different kind of admissions barrier is the quota that a regional vocational school frequently assigns to the several districts it serves. Students in each sending district are therefore competing for a finite number of spaces. When in addition they must present evidence of good scholastic attainment, exemplary deportment, and "interest," the competition becomes acute.[33] Indeed, some vocational schools are very elite institutions. School administrators have the luxury of selecting the students they believe, by their definition, will be successful. Minorities and females who may be perceived to have "special needs" or to be students who will not "fit in" to the school's elitist image of itself will be screened out.

Underrepresentation of minorities and women. Although women and minorities nationally are overrepresented in secondary vocational school enrollments compared to their proportion in the high school population,[34] they are underrepresented in some vocational schools. For example, the Pennsylvania Human Relations Commission reports that women constitute just under 50% of all pupils in grades 10 through 12 of the state's high schools and make up 60% of the secondary vocational programs in those schools, yet they represent only 36% of all students enrolled in the 65 area vocational technical schools.[35] In the Florida study, only 36% of the area vocational schools' enrollment were women. The Massachusetts Advisory Council found that 13.7% of all students attending municipal vocational schools and 26.3% of all students attending regional vocational schools in the Boston metropolitan area were women. Females constitute 36.2% of all those enrolled in Springfield area vocational schools. The Council's report concludes that women were the most underrepresented group of students included in its study.[36] The Advisory Council on Vocational Education reported in the 1960's that

> limited information indicates that, in large cities, a higher proportion of Negro than white youth tends to be enrolled in vocational courses, while the opposite is true elsewhere. However, given their gross underenrollment in college, the occupational training needs of Negro and other minority youth are far greater than these enrollments could meet. Although there are no hard data, experience suggests underrepresentation of Negroes in vocational courses in rural and small city schools and gross underrepresentation in postsecondary vocational education and adult extension courses.[37]

More than a decade later, there are still no hard data on which to base an assessment of how the multiple barriers affect the access of minorities and women to which kinds of schools. But it is clear that governmental actions at all levels, not just societal pressures and personal choice, are responsible for erecting the barriers that have an adverse impact on the preparation of minorities and women for the labor market.

Distribution of Funds

In 1974 the General Accounting Office reported on the basis of OE statistics that "only 51% of the federal funds used for vocational education in the Fiscal Year 1973 were directed to metropolitan areas where 69% of the nation's population resided during the 1970 Census."[38] Evidence of an anti-urban bias in the distribution of federal vocational education funds is inconsistent. A Syracuse University Research Corporation study found that, except for Title I of the Elementary and Secondary Education Act, large cities were receiving less federal aid than their proportionate share of the state's population would imply. The 50 largest cities with 21.3% of the pupil enrollment in their combined 28 states and 26.4% of the disadvantaged Title I count received 15.9% of vocational education funds.[39] An Office of Education study, however, reports no anti-central-city bias in the distribution of federal vocational education money.[40]

Two studies of the allocation of federal and state money in Massachusetts do document discrimination against vocational schools located in cities. While only 11% of all vocational students attended regional vocational schools in the 1973-74 school year, 53% of all federal and state funds were allocated to these schools, which are located primarily in suburban areas and do not draw their students from economically depressed areas.[41]

There simply is no thorough analysis of vocational school finance, but the evidence available convinced Congress that federal vocational education funds were not concentrated where the need is the greatest, that is in poor areas with high youth unemployment. In many states, such areas are also likely to have high concentrations of blacks and other minority youth. The 1976 Vocational Education Amendments sought to redirect federal funds to the area of greatest need and required the National Institute of Education to assess the impact of this, as well as imposing other requirements. In addition to documenting the geographic distribution of federal and state dollars within states, the question of whether there is discrimination against minorities and women in the allocation of financial resources must also be examined. Intrastate and intradistrict funding patterns must be explored to find out whether suburban, predominantly white, schools spend more, about the same, or less than city schools of comparable size. Per-pupil expenditures for schools and courses which are predominantly minority or female as compared to those schools and programs which are heavily white and male should be documented. One can surmise that training in home economics and office occupations might cost less per pupil than machine shop and other technical programs, that masonry and food service programs do not cost as much per pupil as air conditioning and aircraft mechanic programs. But where the same or very similar courses are provided for different racial and economic groups, are there disparities in expenditures? What causes them? If disparities do exist, a legal analysis is required to determine whether recipients of federal financial assistance are violating Title VI or Title IX in the distribution of vocational education funds. If there are manifest race or sex disparities in the distribution of federal money, the responsibility of the federal government must also be studied.

Because so little concrete information exists about whether there is discrimination against minorities and women in the distribution of federal and state vocational education funds, this paper can only suggest what the research and compliance issues are. The indirect evidence--school location, quality of facilities, course offerings, enrollment and staffing patterns, the provision of other services to students--leaves no doubt that there is a serious problem which awaits a thorough and comprehensive analysis.

Within-School Patterns of Race and Sex Enrollment

Statistical documentation of minority and female participation in different vocational courses is abundant. The problem is not finding out what the facts are but rather determining what they prove with respect to Title VI and Title IX.

The most useful source of race and sex enrollment data to date is the survey of area vocational-technical schools conducted by the Office for Civil Rights in the 1973-74 school year. That survey covered every state and included a cross-section of secondary and postsecondary schools, facilities in central cities, suburbs, small towns, and rural areas, and state and locally operated institutions. It also reported minority population in the service area, the names of feeder schools, race and sex participation in apprentice programs, and the minority and female composition of instructors and administrators. Summaries of the data for four states reveal the general patterns.[42]

Connecticut. Women made up only 10% of the total enrollment in the 14 state-operated schools surveyed, perhaps because those schools did not offer marketing and distributive education or business and office occupations. Health programs were 97% female; home economics was 77% female (all males were in food management); cosmetology was 99.5% female; trade and technical subjects had very few women. Nonwhite enrollment, which was 8% overall, ranged from 2% in air conditioning, to 8% in nursing and dental assistant training, 8% in auto mechanics, and 17% in food management.

Florida. Florida's area vocational schools are a combination of secondary and postsecondary institutions and of local and state operation. Female enrollment was more than 90% of the total in health and office occupations and home economics; 52% in marketing (floristry was over half female); 19% in technical programs; 14% in agriculture, and 11% in trade courses. The state's total minority population was reported as 15.8% and the black population as 12.2%. Yet total minorities represented 22% and blacks 19% of the enrollment in area vocational schools. Their distribution across broad occupational categories was as shown in Table 2.

TABLE 2

Distribution of Minority Enrollment, Florida Vocational Schools

Category	All Minorities	Black
Office occupations:	32%	29%
Home Economics:	23%	21%
Marketing:	22	19
Trade:	18	15
Health:	16	14
Agriculture:	16	15
Technical courses:	12	10

SOURCE: Office for Civil Rights.

Massachusetts. In 14 of the 23 regional vocational high schools responding to the survey, the enrollment was 24% female. Business and office occupations, home economics, and health programs had enrollments that were, respectively, 80%, 88%, and 96% female. The marketing category was 44% women overall, but when food services and distributive education were subtracted, the female enrollment dropped to 3%. Technical occupations were 11% female. Trade and industrial programs were 6% female, but 80% of these women were taking commercial art, cosmetology, and quantity food preparation. Unfortunately, data on minorities by program are unavailable.

North Carolina. The area vocational schools surveyed in this state are all community colleges. Women represented 37% of the enrollment. Blacks constituted 20% of the enrollment, just slightly lower than the state's 22.2% black population. Women made up 89% of the enrollment in health programs, 96% in home economics, 15% in trades, and 11% in technical courses. Forty-two percent of the students in office occupations were women; men were concentrated in three programs - management, accounting, and data processing. In home economics, 32% of the enrollment was made up of black women. Black enrollment in trade occupations was reported at 40%, largely because black women in cosmetology and art were included in this category.

Texas. The female enrollment in the area vocational schools surveyed was 34%, concentrated in the traditional programs: health (84%), home economics (83%), and office occupations (57%). It was extremely low in trade (9%) and technical (4%) programs.

Table 3 shows the distribution of the minority enrollment by occupational category:

TABLE 3

Distribution of Minority Enrollment, Texas Vocational Schools

Category	All Minorities	Black	Spanish
Total Enrollment:	27.0%	14.0%	13.0%
Home Economics:	74.0	49.0	25.0
Office:	37.0	12.0	24.0
Trade:	28.0	9.0	18.0
Health:	25.0	13.0	12.0
Technical:	21.5	6.0	14.7
Marketing:	20.0	8.6	11.0
Agriculture:	5.9	4.0	2.0

SOURCE: Office for Civil Rights.

The OCR analysis notes that all minorities constitute 31.6% of the total population in Texas. Although 14% of the enrollment in the schools reporting was black, 30% of the total black enrollment was found in one Fort Worth school. Ninety-six percent of the Spanish-surname enrollment was clustered in six Fort Worth schools.

The enrollment figures reported by broad occupational categories from these five selected states do not reveal the often substantial minority and female concentrations in certain courses within those categories. The patterns do confirm, however, that vocational training is perpetuating the racial and sexual stratification in the labor market. Women and minorities are underrepresented in training leading to higher-paid occupations. They are overrepresented in courses leading to the less skilled and lower-paying jobs. Within traditionally male and female courses, there are racial differences. In Louisiana area vocational schools, for example, 26% of the enrollment in the health occupations category was black; but while 51% of those in nurses' aid training were black, only 26% of those training to be nurses were black.

Although the factors influencing a student's selection of vocational training are manifold, the central question is what role school officials play. How much of the race and sex disparities is attributable to the actions of principals, teachers, and counselors?

It is not always easy to ascertain the effect of counseling upon student course selection, primarily because other persons--parents and peers--also have an obvious influence. Nonetheless, counselors do have a considerable influence, as demonstrated by a study conducted by the Norfolk (Virginia) Public Schools and a report by the American Friends Service Committee on Title IX implementation in six Southern states.[43] Questionnaires were administered to 195 students at the Norfolk Technical-Vocational Center. Fifty-eight percent of the students surveyed felt that counselors influenced to some degree their selection of courses. Over half of the students had discussed specific courses with their counselors, with 88% of the students reporting that their counselors had encouraged them to pursue the courses in which they themselves were interested. More than a third (38%) of the students said that counselors were the source of their first serious interest in attending vocational school. A questionnaire administered to senior high school guidance counselors revealed that 42% of them reported differentiating between appropriate courses for men and for women.

The Norfolk study showed that counselors had a greater influence on black than on white students. Students by each race/sex group were asked if counselors had "some influence" on their course selection. Forty-six percent of the black women and 48% of the black men said yes, while only 27% of the white women and 24% of the white men said yes. Affirmative answers to the question of whether counselors had had "no influence" on course selection were as follows: white men 62%, white women 48%, black women 25%, and black men 19%.

If black students are more heavily influenced by counselors than white students are, and if black students are clustered in the programs preparing them for menial, low-paying, non-union jobs, then questions of Title VI compliance do arise. Similarly, when women face a greater burden of proof of their interest and ability in training which is nontraditional for their sex, such admissions criteria would constitute a violation of Title IX. The difficulty of documenting the actions of counselors is not to be underestimated. However, OCR has not addressed the question of whether the racially or sexually adverse impact of counselors' influence is a violation of Title VI or Title IX or whether remedial action is legally required.

Vocational Education and Work Opportunity

Actual experience on a job during a student's career in a vocational school is an important part of his or her preparation for the labor market. Almost one quarter of all secondary vocational students participate in work-study and cooperative education programs. Are blacks and women participating in these programs in proportion to their presence in the vocational enrollment? Do they share equally with white men the opportunity to earn the equivalent wages and to work in jobs related to the field in which they are enrolled? The evidence is that they do not, but more detailed documentation of this problem is needed.

The data, meager though they are, show that a higher proportion of whites than blacks are participating in cooperative education and work-study and that whites, more so than blacks, are likely to be working in jobs related to their field of training in vocational schools. The picture for women is somewhat different. Approximately the same proportion of men and women are participating in cooperative education and work-study, but men tend to work more hours a week and in jobs more closely related to their classroom training.[44]

Job placement services are yet another service vocational schools may provide for their students. Whether job placement is done informally by course instructors or through a structured program, the issue is whether such a service is made equally available to minorities and women. Job placement programs must be investigated and statistics gathered in order to answer this question, for no such information is presently collected by the states or the Office of Education.

Title VI and Title IX regulations clearly cover nondiscrimination in any service such as work-study, cooperative education, and job placement provided by recipients of federal financial assistance.[45] Vocational schools must be cognizant of the equal opportunity record of employers to which they refer students. For a vocational school to say that it does business only with equal opportunity employers is not enough. It must keep records by race and sex of those students referred, those interviewed, those hired, as well as the type of job and salary obtained. Vocational schools must decline to make their facilities and services available to employers who discriminate in hiring and promotion, whether those companies are employing graduates of the school or work-study and cooperative education students.

Apprentice Programs in Vocational Schools

Many vocational schools offer apprenticeship programs which are operated by unions or employers. The school may lease or make available classrooms and shops at no charge. In some cases, the school may even pay the apprenticeship instructor. Apprentice programs are an important part of a vocational school's program because they lead directly to well-paid, union jobs which are the bottom rung of the industrial job structure.

Apprenticeship programs in area vocational schools are overwhelmingly dominated by white males, as is demonstrated by the statistics taken from the 1974 OCR survey, as shown in Table 4.

The exclusion of blacks from unions, especially in the construction trades, is well known.[46] Only recently have women begun to enter traditionally male, blue-collar jobs in industry and construction.[47] The question for vocational schools is whether they may make their facilities available to union apprenticeship classes from which minorities and women are excluded. While schools are not responsible for the discriminatory conduct of unions or employers, they are prohibited by Title VI and Title IX from providing any service, or other benefit, in their facility that discriminates on the basis of race, or sex.[48]

TABLE 4

Proportion of Black and Female Enrollment in Apprenticeship Programs

State	% Black	% Women
Connecticut	5.0	--[a]
Florida	3.0	3.7
Georgia	9.0	0.0
Massachusetts	0.6	0.09
North Carolina	14.0	0.4
Pennsylvania	12.0[b]	NA
South Carolina	22.0	7.6
Texas	10.5	0.6
Virginia	8.0	0.7

SOURCE: Office for Civil Rights.

[a] In Connecticut there was one woman apprentice, an apprentice chef.

[b] Ninety-eight percent of all Pennsylvania blacks in apprentice programs were in one Philadelphia school. Althougn that school had a 93% black enrollment in its vocational programs, only 23% of the apprentice classes were black.

The Office for Civil Rights has never issued a policy interpretation that the Title VI and Title IX regulations apply specifically to vocational schools that make their services available to unions which exclude minorities and women. Nor has OCR stated what action vocational schools must take with respect to apprenticeship classes conducted in their facility.

Employment

Both Title VI and Title IX cover all employees in all vocational schools receiving federal funds.[49] Forty-nine percent of all vocational education teachers in secondary school systems are women, but they are overwhelmingly concentrated in health and home economics.[50]

Black teachers represent 8% of all teachers in these school systems, and 20% of these are teaching home economics.[51]

The OCR survey of area vocational schools, as well as the compliance reviews and complaint investigations it has conducted, document serious underrepresentation of minority teachers even in predominantly nonwhite schools. Women instructors are, by and large, teaching traditionally female courses. In a random sample of 400 area vocational schools, 93% of the directors were found to be men.[52] Even when presented with substantial evidence of discrimination in employment, OCR has failed to enforce Title VI.[53]

Vocational education administrators contend that black teachers are hard to find because wages in private industry are so much more attractive than the salaries that they offer. But if they can find whites to teach at those salaries, why can they not find blacks? If hiring is done locally or through state civil service systems, recruitment and hiring practices which are discriminatory must be corrected.

Other employment practices--promotion, compensation, job classification and assignment, and fringe benefits--must also be examined for their discriminatory effects. For a field in which black students are so heavily represented, there are both legal and educational reasons why the number of black teachers and administrators should be increased dramatically. If sex stereotyping in vocational programs is to be eradicated, women must be trained and recruited to teach the traditionally male-dominated courses so that female students will be encouraged to enroll. Women have been severely disadvantaged in the award of grants under the Education Professions Development Act.[54] As single-sex schools are eliminated and racially dual ones dismantled, women and black vocational educators must not bear the brunt by being demoted.

Finally, the race and sex employment patterns of state departments of vocational education deserve special scrutiny. At present there are only two women and black state directors of vocational education. Staffs of state departments are predominantly white male. Women professionals are almost exclusively home economics or business supervisors or the sex bias employee required by the 1976 Act.

The entire area of employment in vocational education is one where data are sorely needed and could be collected by requiring the information in the annual accountability report submitted to the Office of Education. But more important is the need for enforcement by OCR and the establishment of affirmative action requirements by OE.

Recommendations for Research

The National Institute of Education's mandate in the Education Amendments of 1976 is to conduct a study of vocational education, including "an examination of how to achieve compliance with, and enforcement of, the provisions of applicable laws of the United States." That study must include the two principal nondiscrimination statutes, Title VI and Title IX.

Five major research projects are suggested by the compliance issues addressed in this paper. In each research area, NIE's task is twofold. First, it must examine state and local governmental actions which affect minority and female access to and participation in vocational education, and report to Congress on the extent to which state departments of vocational education and schools are complying with the requirements of Title VI and Title IX. Second, the adequacy of federal enforcement of these nondiscrimination requirements by the Office of Education and the Office for Civil Rights warrants NIE's attention. The 1976 Amendments have set in place a number of planning and accountability mechanisms which could be the vehicles by which civil rights compliance is brought about. Title VI and Title IX carry with them a potent weapon--the threat of losing federal funds for failure to comply. The federal government must use that sanction if the historic and pervasive race and sex discrimination in vocational education is ever to be uprooted.

Vocational school finance. A comprehensive examination of vocational school finance should be a high priority. Among the questions it should explore are:

1. What are the patterns of distribution of state vocational education money relative to geographic area, level and type of training, minority population centers? Is the allocation of state funds detrimental to districts or schools whose service area is heavily minority? Analysis of state funding patterns prior to, as well as subsequent to, the 1976 Act would help assess the impact of that legislation. The extent to which federal requirements may affect the distribution of the states' own funds should be investigated.

2. What are the differences in per-pupil expenditure among schools and programs with varying racial and sexual characteristics?

3. Has the distribution of federal financial assistance by states been disadvantageous to districts or schools which have higher proportions of nonwhite students?

Vocational school construction. What has been the federal contribution, from all sources, to the construction or renovation of area vocational schools? Such a study should answer these questions:

1. What has been the racial and geographic impact of these expenditures?

2. How many and what kinds of federally assisted projects have been located in urban, suburban, small town, and rural areas? How has the construction or renovation affected enrollment patterns and program quality in neighboring schools?

3. What are the factors that govern state decision making with regard to location of new schools, additions to other schools, or renovation and upgrading of existing institutions?

Vocational school governance structure. Has the creation of special vocational school districts, regional consortia, or state-operated institutions had an adverse impact on minority and female access to a diversified vocational education curriculum?

1. What are the state laws, policies, and practices which govern the establishment of regional districts and state institutions?

2. Has state action resulted in the creation of separate and unequal vocational training for minorities and women?

Cooperative education and work study. Because so little definitive evidence exists of the extent to which minorities and women participate in cooperative education and work study, data on this subject should be gathered and analyzed. The study should determine the extent of participation for each race/sex group of students relative to the type of employment, its relevance to classroom training, the wages earned, and requirements for participation.

Admission criteria. There is a need to identify the more commonly used requirements for admission to vocational schools and for placement in programs. This project should:

1. Determine how the various criteria are used and assess whether they are appropriate for their intended purposes.

2. Determine the extent to which various criteria screen minority and female applicants out of vocational schools and programs.

3. Seek out those requirements which validly predict successful completion of vocational preparation for different racial and ethnic groups and for women.

4. Examine academic and aptitude tests used by vocational schools for race and sex bias.

NOTES

[1] The George-Reed Act of 1929, the George Ellzey Act of 1934, the George-Deen Act of 1936.

[2] Office of Education, *Vocational Education: Characteristics of Students and Staff* (1972), p. 7, Table II-I.

[3] Gunnar Myrdal, *An American Dilemma* (New York: McGraw-Hill, paperback ed., 1964), pp. 897-900.

[4] E. Franklin Frazier, *The Negro in the United States*, rev. ed. (New York: Macmillan, 1957), p. 438.

[5] Charles H. Thompson, "The Federal Program of Vocational Education in Negro Schools of Less than College Grade," *Journal of Negro Education*, 7 (1938), 303.

[6] Frazier, *The Negro in the United States*, pp. 438-39.

[7] *Ibid*.

[8] 42 U.S.C. 2000d, Sec. 601.

[9] 20 U.S.C. 1681.

[10] Phyllis McClure, *Title VI and Title IX Compliance by the Office for Civil Rights in State-Operated Special Purposes and Vocational Schools Pursuant to Adams v. Mathews*, NAACP Legal Defense Fund, July 1976. Hereinafter referred to as *LDF Report*.

[11] Office for Civil Rights, *Title IX Manual*, September 1975.

[12] *Adams* v. *Califano*, C.A. No. 3095-70 (D.D.C.); *Women's Equity Action League* *(WEAL)* v. *Califano*, C.A. No. 74-1720 (D.D.C.).

[13] The term "minority" in this paper refers to black Americans, unless otherwise specified.

[14] Advisory Council on Vocational Education, *Vocational Education: The Bridge Between Man and His Work* (1968), Reprinted in Notes and Working Papers Concerning the Administration of Programs Authorized Under the Vocational Education Act of 1963, prepared for the Subcommitee on Education of the Committee on Labor and Public Welfare, U.S. Senate, p. 23, 37. The Council was appointed by HEW Secretary John Gardner in November 1966.

[15] General Accounting Office, *What is the Role of Federal Assistance For Vocational Education?* (December 31, 1974), p. 51. Hereinafter referred to as *GAO Report*.

[16] Characteristics, Table 137, p. 182.

[17] Massachusetts Advisory Council on Vocational-Technical Education, A Study of Minority Group Access to Vocational-Technical Schools in the Boston and Springfield Metropolitan Areas (May 1975), pp. 2, 18. Hereinafter referred to as Massachusetts Study.

[18] LDF Report, pp. 43-44.

[19] GAO Report, p. 16.

[20] In Fiscal Year 1974, the federal government spent $19.6 million for school construction under part B of the Vocational Education Amendments of 1968. Office of Education, Vocational and Technical Education: Selected Statistical Tables, Fiscal Year 1974 (June 1975), Table 012, p. 10.

[21] In February 1974, OCR conducted a race and sex survey of 1,507 area vocational schools, but these schools were not necessarily those constructed with federal money.

[22] Title VI regulations provide that "in determining the site or location of a facility,..a recipient may not make selections with the effect of excluding individuals from, denying them the benefit of, or subjecting them to discrimination...on the ground of race...." 45 CFR 80.3 (b) (3).

Regulations issued pursuant to the Vocational Education Amendments of 1976 have, for the first time, required that area vocational school construction meet the non-discrimination provisions of the Title VI regulations. 45 CFR 104.553.

[23] Massachusetts Study, p. 3. The Council's report does not explain why these two schools have such racially disparate enrollment.

[24] LDF Report, p. 35.

[25] GAO Report, p. 86.

[26] The 1974 OCR survey of 1,507 area vocational schools identified 28 single-sex or predominantly one-sex schools throughout the country. Since the survey was by no means a comprehensive one, the number of predominantly single-sex schools is likely to be underestimated.

[27] Massachusetts Study. The Henry O. Peabody School for Girls offers fashion design, fashion merchandising, business education, cosmetology, practical nursing, and culinary arts. The culinary arts program, which had more male than female students, accounted for the 22.4% male enrollment.

[28] Male/female enrollment figures by program offering at Springfield's High School of Commerce and Technical High School were not included in the Council's report.

[29] Office for Civil Rights, Memorandum: AVES Survey, State-Operated Schools in Alabama (July 28, 1977), p.2. The same correlation appeared in other state-operated schools. There were 23 state-operated schools in Alabama, of which 13 offered air conditioning courses. Although the state operated five schools with a population in excess of 80% black, none offered air conditioning. Conversely, there were three courses which were offered only in black majority schools. They were masonry, appliance repair, leather work (shoe repair).

[30] 45 CFR 86. (c) (1) (4).

[31] Children's Defense Fund, Children Out of School in America (Washington, 1974); Children's Defense Fund, School Suspensions: Are They Helping Children? (Washington, 1975).

[32] O.K. Buros, The Seventh Mental Measurements Yearbook (1972), 2:1060.

[33] GAO identified a career development center in one city which rated applicants on the basis of achievement, attendance, and disciplinary records. Only 8% of the city's high school students were enrolled, yet more than 500 spaces were unfilled. GAO Report, p. 86.

[34] Women constitute 49.5% of all high school students but 57% of secondary vocational school enrollment. Minorities (American Indian, Black, Oriental, and Spanish-speaking) are 14% of the total high school enrollment but constitute 23% of secondary vocational enrollments. Characteristics, pp. 8-9.

[35] Pennsylvania Human Relations Commission, Participation of Female and Black Students in Approved Vocational Education Courses and Programs in Pennsylvania, School Year 1973-74 Compared with School Year 1971-72 (June 10, 1976); Participation of Female Students in Area Vocational Technical Schools of Pennsylvania, School Year 1974-75 (October 25, 1976).

[36] Massachusetts Study, p. 2.

[37] Advisory Council on Vocational Education, Vocational Education, p. 37.

[38] GAO Report, p. 24.

[39] Joel S. Berke, et. al., Federal Aid to Public Education: Who Benefits? (Syracuse University Research Corporation, January 1971), p. 39.

[40] Alan L. Ginsburg, Patterns of Federal Aid To School Districts (Department of Health, Education, and Welfare, February 1975), p. 37.

[41] Massachusetts Advocacy Center, Equal Opportunity Denied: Vocational Education in Massachusetts (undated); Massachusetts General Court, Joint Committee on Post Audit and Oversight, State Financial Assistance for Secondary Vocational Education, July 15, 1976.

[42] These summaries are drawn from Office for Civil Rights memoranda prepared in July 1977.

[43] Norfolk Public Schools. Memorandum from Director of Guidance to the Assistant Superintendent, Division of Pupil Personnel Services, (February 9, 1977); American Friends Service Committee, Almost As Fairly (Atlanta, 1977), pp. 23-27.

[44] Characteristics, pp. 20-21; p. 133, Tables 55, 55A, 55B.

[45] 45 CFR 80.3 (b) (1) (iii); .4; .6 (b); 45 CFR 86.31 (b) (7); 86.38.

[46] Ray Marshall, The Negro and Organized Labor (1965); Marshall and Briggs, The Negro and Apprenticeship (1967).

[47] The Department of Labor has recently issued two proposed regulations which would require goals and timetables for employment of women by construction companies receiving federal contracts (Federal Register, August 16, 1977, pp. 41378-83) and for affirmative action plans for registered apprentice programs (Federal Register, September 30, 1977, pp. 52441-49).

[48] 45 CFR 80.4; 45 CFR 86.31 (b) (7).

[49] 45 CFR 80.3 (c); 45 CFR 86.51.

[50] Characteristics, p. 37.

[51] Ibid., p. 38.

[52] Pamela Ann Roby, Vocational Education and Women. Mimeographed, University of California at Santa Cruz, May 1975, P. 19.

[53] LDF Report, pp. 62-63.

[54] Characteristics, p. 37.

VOCATIONAL EDUCATION FOR SPECIAL-NEED STUDENTS

Phyllis Hamilton

This paper seeks to expand the understanding of the problems of special-need students in vocational education, primarily the disadvantaged and handicapped for whom there are set-asides in vocational education legislation. Although the major emphasis of the paper is on these above-mentioned groups, women are also included, since they too constitute a minority group with special needs in vocational education. No set-asides have yet been initiated by the Congress for women in vocational education, but sex discrimination is a major theme of the Education Amendments of 1976, which require that state departments of vocational education expend $50,000 in a program that coordinates women's activities.

Many of the criticisms of vocational education cite its failure not only to provide access to vocational education in general, but also to develop the specific types of programs that would help to equalize the life chances of students with special needs.[1] One study found that neither public nor proprietary schools had achieved much success in helping minority students to overcome barriers of class and income.[2] The research found that only two out of ten minority graduates from both public and proprietary schools who choose professional or technical-level training ever get professional or technical-level jobs. No incidence of upward mobility as a result of placement in vocational programs was found.

According to a General Accounting Office report, 60 percent of the handicapped people between the ages of 16 and 64 have never finished high school. Few are receiving skill training to prepare them for employment; in fact, less than 2 percent of the 13 million people served by vocational education in the U.S. in 1974 were handicapped.[3]

For women, the evidence also appears discouraging. One of the most striking findings of employment statistics in the U.S. over the past quarter century is that women accounted for 60 percent of the total increase in the size of the labor force between 1950 and 1976.[4] Their occupations, however, have remained relatively static over the past 26 years; 56 percent of all working women are in clerical or service occupations compared to 15 percent of all working men.[5] According to Eli Ginzberg, these statistics lend support to the view that the U.S. economy has developed a dual labor market in which white men have preferred access to the good jobs while women and members of minority groups are generally trapped in the poor jobs.[6] It appears that vocational education had done little to correct this imbalance; in 1972, of the 6.4 million women and girls enrolled in public vocational programs across the country, 49 percent were being trained in home economics and another 28 percent in office practices.[7]

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315

The high expectation of the 1960's that the problems of students with special needs would be met through vocational education does not appear to have been realized. The Vocational Education Act (VEA) of 1963 held the promise that all persons of all ages in all communities would have ready access to vocational training that was of high quality and suited to their needs, interests, and ability to benefit from such training. Aware of the difficulties attached to meeting such goals, the Congress specified in the 1968 Amendments that 15 percent of the basic state grant must be set aside for disadvantaged students and 10 percent for handicapped. Thirteen years later, in the Education Amendments of 1976, Congress hiked the set-asides still further: 20 percent for disadvantaged and 15 percent for handicapped.

Given these congressional mandates, what has gone wrong? What are the shortcomings in the vocational education system that have negatively affected the life chances of students with special needs? What can be learned from the vocational education of the last decade to improve vocational education in the future for disadvantaged and handicapped students and to meet the new emphasis on the needs of women? These are basic questions which the National Institute of Education should address.

The Definitional Dilemma

Any analysis of vocational education's failure to meet the needs of special-group students must surely start with the definitional problems associated with the labels "disadvantaged" and "handicapped." The term "disadvantaged" originated as a euphemism for "poor people" and was applied to enrollees in the poverty programs that started in the mid-1960's. Ultimately, the term became familiar to and was also adopted by vocational educators, despite the fact that it was not used in the VEA of 1963.

The difference between the poverty legislation and vocational education legislation, however, is that disadvantaged students in vocational education are selected on an individual basis rather than by the target-group formula applied in antipoverty programs of the era. In fact, there is some evidence that vocational education legislation was designed to overcome the notion that the disadvantaged are a monolithic group whose problems can be addressed and presumably solved by a generalized group program.[8] The VEA Amendments of 1968 did permit the designation of target areas or groups for administrative purposes, but once such target areas were identified, the emphasis still had to be on the individuals in need of remedial treatment.

In theory, the idea made sense. In actuality, however, for most vocational educators putting the idea into practice was overwhelmingly difficult. Examination of state and local programs for the disadvantaged reveals that the term "disadvantaged" has no common meaning; it varies widely from state to state, from community to community, and from school to school. John Walsh and Jan Totten found that the reason for the legislation's emphasis on individual assessment was not well understood at either the state or local level. In the absence of clear definitions, planning was extremely difficult and programs were questionable:

> Without clear definitions of the term "disadvantaged," and the application of individual assessment techniques, planning--except in a general sense--was all but impossible. Planning was generally done on an ad hoc basis; that is, the money was there to be spent, and projects had to be designed to justify the expenditures. The types of occupational training programs in which disadvantaged students were being enrolled were few in number and of questionable value.[9]

A common criticism of all community-level respondents interviewed in their study was that the definition of the term "disadvantaged" was so broad that virtually all students could be diagnosed as in some way disadvantaged. As a result, the real disadvantaged were not being served.

Some see the problem of access as closely related to the inclusion of the term "regular vocational education programs" in the definition of disadvantaged found in the 1968 Amendments:

> ...persons (other than handicapped persons...) who have academic, socioeconomic, or other handicaps that prevent them from succeeding in regular vocational education programs. (My emphasis.)[10]

Some vocational educators have construed this language narrowly to mean that set-aside funds can only be used for those who are in regular vocational programs.

Although vocational educators agree that this aspect of the definition poses a problem, some are quick to suggest that there is a sound rationale behind the creation of the original definition. As they perceive it, since disadvantaged students in secondary schools are the recipients of so many other services from federally funded programs, such as Title I, the vocational education set-asides should indeed be reserved for those already in vocational education programs so as not to duplicate effort and federal expenditures.

Research evidence, however, shows that secondary and junior high school students are receiving only a relatively small amount of Title I funds. Throughout all regions of the country, Title I participation and allotments have been concentrated in the elementary grades. One examination of Title I funds found that approximately 81 percent of the total participants and allotments were kindergarten, prekindergarten, and grades 1 though 6. Only 19 percent of the students receiving Title I funds were in grades 7 through 12.[11]

Although handicapped students are more easily identified than disadvantaged students, they too experience problems of definition. As one study describes it:

> The very designation "handicapped" not only sets individuals apart from the rest of the population but also carries with it a strong negative connotation of incompleteness and incompetence. Even attempts to further classify the handicapped into such categories as "educable mentally retarded," "speech impaired," "hard of hearing," and "blind" are often arbitrary in their failure to account for individual differences, and are sometimes inaccurate or misleading.[12]

This same study found that there was a trend, especially in rural areas, to mix the handicapped and the disadvantaged in the same classes. This practice was justified by some administrators on the ground that if they did not mix the two together, there would not be enough students in either category for the school to qualify for state grants. In most cases, however, the educational needs of the two groups were quite different, and those classified as disadvantaged students resented being placed in classes with those categorized as mentally retarded.[13]

An investigation for Project Baseline also found there to be no standardized criteria for including persons in either the disadvantaged or handicapped categories. Lack of such criteria was found not only to pose problems in identifying program participants, but also to impact on policy and decision making, obscuring rules and regulations.[14]

Funding Patterns

An extremely important issue in vocational education is the manner in which federal funds for special-needs programs are allocated among the states and localities. One of the few studies that attempts to trace priorities and flows for federal aid to the disadvantaged was conducted by Michael Kirst and Joel Berke who, in 1972, completed a six-state comparative study of federal vocational funding.[15] The analysis focused on the state allocation pattern for urban disadvantaged.

The researchers found that the political culture and traditions of state education politics (different in every state) principally determined state distribution and administration of federal aid. Standard operating procedures of state governments are disturbed only be federal regulations that signal a mandatory change. Federal money can be considered a stream that must pass through a state capital; at the state level, however, the federal government is rarely able, through its guidelines and regulations, to radically divert the stream or reverse the current. Several of the studies vividly illustrated how state attempts to administer the 15 percent set-asides for the disadvantaged were effectively defeated by inadequate local implementation.

In many states, set-asides for the handicapped required by the VEA of 1968 were viewed only as a legal and fiscal necessity; in some, the requirements were believed to have been met by simply transferring funds to another state agency more directly concerned with the handicapped. Since this kind of transferral could be accomplished for the handicapped funds (as it could not be for the disadvantaged), it has resulted in even less of a concern for the handicapped than it did for the disadvantaged.

Coordination and Linkages

Vocational education has experienced innumerable problems of coordination both within the educational system and external to it. The importance of this issue has been recognized by the Congress; where previous vocational education legislation largely ignored the problem, coordination is a major theme of the 1976 Amendments.

The previously cited evaluations of the effectiveness of vocational education for the disadvantaged and handicapped clearly express the importance of interagency coordination. One stated that fragmentation of agencies is a major deterrent to programming for the handicapped:

> The fragmentation of educational agencies into special units, each with its own private line to funding sources at the state and federal levels, is one of the major inhibitors to comprehensive educational programming for the handicapped. It is unrealistic to expect divisions of vocational and special education to initiate such policies. They must emanate from the highest levels of the educational hierarchies.[16]

To appreciate the difficulty experienced in most attempts to promote cooperation and coordination between vocational education and other agencies, one needs to become familiar with the deep roots of separatism that have marked vocational education since its inception.

Although educators frequently discount the importance of an historical perspective in studying educational needs of the future, I submit that a review of the history of vocational education is essential in understanding the problems the field faces today, especially as it endeavors to meet the needs of special groups. Some authors contend that the introduction of vocationalism at the turn of the century established the school system as we know it today. In effect, vocationalism led to a reassessment of the meaning of equality of educational opportunity. Although hailed by its proponents as a democratizing force, vocational education served to reinforce social-class lines and to perpetuate the hierarchical caste system of the labor force. As Norton Grubb and Marvin Lazerson describe it:

> In essence, curricula differentiation, categorization of students by future economic roles, and the adjustment of the curriculum to the economic demands of the marketplace became the defining characteristics of equality of educational opportunity. Only by these means could individuals on the fringes of society--the poor, racial minorities, the "manually motivated"--be integrated into the educational system and then into the labor force.[17]

John Dewey--who fought a lifelong battle against dualism--endeavored to bring liberal arts and vocational education into a unitary system. It was a losing battle, however, and he predicted in 1917 what certainly exists in 1978's educational scene:

> The question of industrial education is fraught with consequences for the future of democracy. Its right development will do more to make public education truly democratic than any other one agency now under consideration. Its wrong treatment will as surely accentuate all undemocratic tendencies in our present situation, by fostering and strengthening class division in school and out.[18]

Thus, in 1917, the separatism that has marked vocational education until the present time was legislated into existence via the Smith-Hughes Act. This separatism starts at the federal level and continues down to the state and university levels, where organizational and departmental barriers prevent coordination of programs. It invades the classroom, where coordination between vocational and academic programs is the exception rather than the rule.

There has been little coordination among vocational education, community agencies, and business and industry. Although advisory councils were established with the Smith-Hughes Act of 1917, these bear little resemblance to the parent advisory councils of Headstart, Follow Through, and other Title I programs that have frequently been effective in meeting needs of disadvantaged students.

Personnel Development

Perhaps the major barrier in the category of personnel development that inhibits the improvement of services for special-need students is attitude. Again, a major inhibitor to changing attitudes of vocational educators is the preservice preparation vocational teachers have received. Most undergraduate preparation of vocational teachers still follows the 1917 Smith-Hughes legislation in separate fields--agriculture, home economics, trade and industrial. Since formal training mechanisms did not exist in 1917, newly formed state boards enlisted the services of state-supported universities in developing programs of teacher training.

Generally, vocational teacher-training programs were not incorporated into colleges of education but rather into the colleges teaching the particular occupations. As additional fields were added under the legislation, teacher-training needs expanded. But the general tendency to assign training programs to whatever institutions or parts of an institution specialized in the occupational skill persisted. Thus, vocational teacher-training programs from the start developed independently and had little relationship to each other.[19] This segmentation by vocational field has been further accentuated by almost total isolation from schools preparing elementary and secondary teachers and was yet further removed from the academicians in the liberal arts and sciences.

Recalling Dewey, Charles Silberman claims that much of what is wrong with teacher education stems directly from this separation.[20]

In most states, workers from industry without pedagogical training can be credentialed with a minimum number of hours of instruction accumulated while they are teaching. The short hours required to receive this credential do not allow for sufficient training in the unique problems of teaching disadvantaged and handicapped students.

The general problem of fragmentation in vocational education has been somewhat reduced by the 1970 introduction of programs under Part F of the Education Professions Development Act (EPDA). Both preservice and inservice training programs have been largely expanded to cut across many vocational fields and, on occasion, to work in concert with social-science disciplines and academic educators. Yet a study of the lessons learned through EPDA found that the inability of Part F to coordinate personnel-development programs in vocational education with such programs as Teacher Corps, Urban/Rural, and the Career Opportunities Program had restricted the training vocational educators received for teaching disadvantaged students.[21]

In all three areas of special need--disadvantaged, handicapped and women--one of the largest problems in terms of personnel development is recruitment of appropriate staff. There are, of course, documented shortages of vocational education teachers.[22] To assist in meeting these shortages the Bureau of Occupational and Adult Education funded a project to develop a model for retraining surplus women teachers in vocational education programs.[23] The intent is for these women to serve as role models for secondary women students who enroll in vocational education programs that traditionally have had a predominantly male enrollment.

Perhaps the most comprehensive document on vocational staff training for women is a set of training packages which are intended for use in inservice training of vocational educators--teachers, counselors, and administrators. All of the packages address the need to expand nontraditional opportunities for students in vocational education, but each package focuses on a different aspect of this need. As a group, these three packages describe the steps that may be taken to expand the vocational options of students, primarily women, the problems that may have to be overcome in doing so, and the legislation that calls for steps to be taken and for problems to be overcome.[24]

In the Olympus study previously discussed, the major constraint limiting the expansion of vocational programs for the handicapped was found to be the lack of trained staff.[25] Vocational educators have generally gone through preservice training in their separate fields with little special instruction on how to meet the needs of handicapped students. In some areas, attempts are being made to recruit handicapped persons into teaching positions to serve as role models for others, but this effort has met with considerable difficulty.

321

Recruitment of ethnic-minority group teachers is a major problem in vocational education. The study of EPDA Part F found that although significant steps had been taken to make personnel development more comprehensive, a major weakness was the lack of minority-group involvement. In a statement made after five years of experience with the Part F program, Part F administrators concluded that:

> The basic problem is recruitment at all levels. We believe further that recruitment of racial and ethnic minorities cannot be accomplished without parental and community involvement and that it requires a plan for affirmative action.[26]

The Research Gap

Compounding the problems surrounding the vocational education of special-need students is the lack of a coherent research base in vocational education. Consequently, most vocational researchers were ill-equipped to conduct research on the needs of special groups. Again, the separatism inherent in the educational system worked against any inclusion of social-science researchers in vocational research. Yet leading figures in the vocational field had been calling for such an interdisciplinary effort. Rupert Evans, for example, in 1963 had this to say:

> We have at present no researchers concerned with the whole of vocational education. Not only must full-time personnel be allocated to the research function but personnel from the various disciplines and professions must also be enlisted for the task. Vocational education as a powerful social, economic, and technological force can only be the product of knowledge originating from a research-team effort. Research--data and methodology--must become interdisciplinary in nature, attack, and application.[27]

Attesting to the difficulty in meeting the needs of disadvantaged youth, Melvin Barlow joined Evans in a similar plea for a cooperative effort among several areas of education:

> Education, in general, has failed to help the disadvantaged youth and vocational education has largely eliminated this group by imposing selection devices.... But vocational education alone cannot solve the problems. Several areas of education must combine their efforts and work cooperatively if effective action is to result.[28]

In a vocationally oriented study conducted in 1971, Marjorie Kelley examined social-science studies focused on issues related to the "culture of poverty." The study found that in the light of more than a decade of research in other disciplines, the assumptions with which occupational educators had approached the problems of poverty appeared rather simplistic. In an introduction to Kelley's report, Dr. John Coster claims that the fundamental assumption of vocational educators appears to have been that providing opportunities for appropriate training would somehow solve the problems of poverty and disadvantage. Yet, he states, these problems appear to involve cultural and psychological factors that magnify them far beyond what occupational training alone can handle.

Kelley goes on to note that many of the notions about motivation, levels of aspiration, and commitment to certain broad cultural values have been challenged by empirical research. Experiences of the poor, the study finds, have produced a different cognitive style or pattern of learning. She recommends a future approach that emphasizes building occupational-training programs on identification of positive attributes:

> What is perhaps needed is an imaginative approach to tapping the latent motivations and aspirations that do exist among the poor and combining these with methods of skill training that make optimal use of the personality characteristics that have been developed as a result of living in impoverished conditions.[29]

In 1974 the National Research Council, with USOE funding, formed a committee to review vocational education research and development funded under the various vocational acts.[30] Most of the findings regarding special-need students were extremely negative. Little research was conducted for the needs of the handicapped, and what had been done was found to be of inferior quality. One commissioned paper focused on research and development for women in vocational education, and a principal finding was that until 1975, no significant research in vocational education had been conducted for women's needs.[31]

Another commissioned paper focused on research conducted for the needs of ethnic minority students under Part C, VEA of 1963, and Parts C, D, and I of VEA of 1968. Among the findings these seem particularly useful:

> The small amount of vocational education research that had been conducted for ethnic minority student needs has been underutilized in program development....
>
> There has been little involvement of ethnic minority group representatives in vocational education research for minority group needs....
>
> For the most part, the research conducted for ethnic minority needs was based on a social pathology model of cultural deficit....
>
> The negative image of vocational education held by minority groups has been reinforced by labels such as disadvantaged....
>
> Most vocational education research for ethnic minorities has been based on stereotypes of "cultural disadvantage;" few have tried to identify positive attributes....

> Specific skill training was a major emphasis of vocational education research for ethnic minorities; remedial basic academic training was a minor emphasis....
>
> A negative self-concept was seen as the biggest block to motivation; use of peer counselors was found to raise self-image....
>
> Staff attitudes, expectations, and behaviors are critical variables in providing effective vocational training to minority students....
>
> No research on recruitment was conducted, but the need for classroom paraprofessionals was a major theme of training activities....
>
> Little research for ethnic minorities had a focus of improving external linkages with business and industry....
>
> Few attempts were made to improve linkages with community agencies and lay citizenry....
>
> Exemplary projects for Part D and research projects of FY 1974 show a direction to more relevant career guidance....
>
> There is an emerging direction to a bicultural emphasis in vocational education research activity for ethnic minority students....[32]

A Concentration on Change

Despite its inertia and its 60-year tradition of fragmentation and separation, vocational education is making small but important gains in the struggle to provide equality of vocational education opportunity to special-need students. It is doubtful that these gains would have been made without the incentives federal legislation has provided. That they are being made is a tribute both to the congressional commitment and to the commitment of innumerable vocational educators who are sensitive to the previous injustices and inequities that have kept special-need students in a state of servility.

Achieving the goal of equal access to high-quality vocation programs for special-need students is one of the largest challenges vocational education faces. New and innovative approaches to vocational education research and development can help. Research funds should be made available for an intensive process evaluation of some of the key programs now in operation. For example, the progress of a California project now in its third year of experimentation should be monitored. What makes this project unique is that for the first time in California, vocational education set-aside funds are being combined with compensatory education funds to develop an integrated program for educationally disadvantaged youth in seven California secondary schools.

There are other promising experiments that vocational educators should know about. The list of research needs could be endless. Based on the issues discussed in this paper, I have outlined but a few of the questions that I believe future research for vocational students with special needs should address:

> How do various definitions of educational equity affect funding patterns in vocational education?
>
> What levels of intervention have proved to be the most economical in vocational education for students with special needs? In compensatory education?
>
> What are the important dimensions of coordination and how can these be applied to vocational education's relationships with other school programs? With external agencies?
>
> What are the individual strengths of disadvantaged and handicapped students? How can these be built upon for better educational outcomes?
>
> How can preservice preparation of undergraduates in vocational education be improved so that more benefits will accrue to special-need students?
>
> How can community-based paraprofessionals be recruited for vocational education programs to assist in providing job skills as well as cultural links with the community?
>
> What are the best techniques for involving vocational educators with research in other fields that has implications for special-need students?
>
> What are the most effective methods of changing teacher expectations for special-need students, and how do these relate to the development of self-concept in these students?
>
> How does the effectiveness of industrial teachers compare with that of public school vocational teachers in meeting needs of special students?
>
> What methods are most effective in getting parents of special-need students involved in planning and participating in vocational education programs?
>
> What are the most significant societal trends that hold promise for the education of special-need students? What are the implications of these trends for vocational education?

NOTES

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VOCATIONAL EDUCATION AS A STRATEGY FOR ELIMINATING POVERTY

Lester C. Thurow

The Limits of Vocational Education

From the perspective of simple neoclassical economics, vocational education can be seen (and was seen during the 1960's) as the prime government policy for upgrading workers whose current earnings put them below the poverty line. By augmenting the skills of low-income workers, vocational education would enable them to sell their labor for a higher wage and thus escape poverty. Augmenting the skills of low-wage workers would in theory have a powerful three-pronged effect on the inequality in earnings. First, the low-income worker who received the new skills would be able to sell his labor at a higher wage rate. Second, the supply of low-skill workers would be reduced and hence their equilibrium wage would rise. Third, the supply of high-skill workers would be increased and hence their equilibrium wage would fall. As a result, both poverty and inequality would diminish.

Under this model, the vocational education system would function in the following manner. Labor economists would make detailed projections of the labor skills demanded and supplied by the economy. These estimates would be based on good surveys of existing vacancies and would be projected five years into the future. Based on the differences between the supplies and demands for labor skills, vocational education authorities would establish training programs to eliminate these differences. By identifying the gaps and reorienting training programs to eliminate them, vocational education programs would be providing individuals with highly salable skills and at the same time increasing society's potential output.

To make this procedure work, the elasticities of substitution (where all relevant considerations such as availability are subsumed under the price) between labor of different skills and between capital and labor must be small in the absence of vocational education. If the elasticities of substitution are small, the concept of a vacancy can be clearly defined, and existing and projected vacancies can be clearly identified. Then training can be specifically tailored to eliminate the vacancies.

If the elasticities of substitution are high, however, the meaning of a vacancy or projected shortage becomes much more tenuous and the value of a particular set of skills designed to fill the vacancy becomes much more dubious. Vacancies and projected shortages in this situation may simply serve as a market signal (via a rise in the effective price) to start substituting different kinds of labor or capital and may not indicate that a skill is highly salable.

The empirical magnitude of the elasticities of substitution depends

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on the level of aggregation of labor skills. At some levels of aggregation the elasticities are low; at others they are high. Generally, the more aggregate the vector of labor skills, the lower the elasticities of substitution between different skills. The elasticities of substitution between different types of electricians are presumably much higher than those between craftsmen and professional workers.

Vocational educational professionals often point out that there is a conflict between the accuracy and detail of skill projections which economists are able and willing to make and the accuracy and detail of labor projections which vocational education planners need. But just as good specific training programs require low elasticities of substitution, so do good labor projections. If the elasticities of substitution are high, there is simply no method which will allow one to make good projections of labor shortages. If accurate skill projections are impossible at the level of detail desired by vocational education, then something is wrong with the degree of specificity of the skills taught in vocational education and the model of vocational education from which these programs spring. The same factors that limit the detail that can be built into skill projections limit the amount of specificity that ought to be built into vocational education.

The labor economist should make his projections as detailed as the elasticities of substitution will allow, but vocational education cannot sensibly make its training any more detailed. To refuse to accept projections because they do not furnish the desired detail is simply to wish to plan for a world that does not exist. Thus, the failure of the labor economist to make adequate projections for vocational education may imply more than simply sloth on the part of the economists.

Leaving aside the difficulty of projecting skill shortages, there is another piece of evidence that also points to high elasticities of substitution. Few private firms bother to make long-range projections of skill needs, and those firms who do make such projections usually make them very badly. Why? Firms may feel that they are too small to have any impact on the labor market, but even small firms have to think about labor supplies if they have an internal labor market with limited ports of entry. Irrationality may be the answer, but the answer is more apt to spring from the fact that firms realize that elasticities of substitution are so high on both the demand and supply side that it simply does not make sense to make long- or intermediate-run labor force projections. If it does not make sense for private firms to make skill shortage projections, then it does not make sense for the government to support educational programs that depend upon the existence of such projections for their success.

Vocational Education and On-the-Job Training

To design a system of vocational education that can play an important role in eliminating poverty, it is necessary to understand how most skills are acquired in the United States. Vocational education is based on the premise that one exogenously invests in skills and then brings these skills into the labor market to sell in much the same way that one would grow a bushel of wheat and then sell it. In fact, most skills in the U.S. are not acquired in formal education or training; rather, they are acquired through on-the-job training from one worker to another.

The evidence for this statement is very clear in the American economy. In the 1960's the President's Automation Commission undertook extensive surveys on how workers learned the actual cognitive job skills they were using.[1] These surveys found that only 40 percent of the work force reported that they were using any skill that they had acquired in formal training programs or in specialized education. Most of this 40 percent reported that some of the skills they were using had been acquired in informal, casual, on-the-job training. The remaining 60 percent acquired all of their job skills through such training. Even among college graduates, over two-thirds reported that they had acquired cognitive skills through informal, casual processes on the job.

Perhaps the most convincing evidence in this direction came when the survey asked workers to list the form of training that had been the most helpful in acquiring their current job skills. Only 12 percent of the work force listed formal training and specialized education, and some of this was carried on at their place of work and was directly dependent upon their having been already selected for the job in question.

Although initially surprising, these results are not without an easy explanation. Most job skills are best taught in conjunction with the job in question, since training and production are complementary products. The sales of goods and services produced in the process of training can help to lower training costs. Only actual production generates the degree of realism necessary to polish production skills. It is also the only way to guarantee that the worker will know everything he needs to know without having to learn lots of things he does not need to know. On-the-job training from one worker to another is simply the cheapest method of training.

As a result, the labor market is not a market where workers with fully developed skills bid for jobs. Rather, it is primarily a market in which supplies of trainable labor are matched with training opportunities that are in turn directly associated with the number of existing job openings. Training opportunities only occur when there is a job opening that creates the demand for the skills in question.

One of the major advantages of on-the-job training (OJT) is that it allows the employer to gain some control over the elasticity of substitution in the vector of labor skills supplied as well as those demanded. By using OJT he creates a pool of partially trained workers who can be easily upgraded when demand requires. OJT creates a high elasticity of substitution between skills, since the skill gaps between the worker who now has the job and the worker who would be upgraded into the job are small. But it is exactly these high elasticities of substitution that undercut the conventional role for vocational education.

OJT affects vocational education in another way. To preserve the incentives of the work force to train and be trained, employers establish internal labor markets, in which skilled workers from the external labor market are not hired when vacancies occur. Instead workers already in the work force are upgraded. This often means that vocational education creates skills that cannot easily be sold even when there are job openings. Employers simply do not hire at that skill level. Instead they establish job ladders with limited ports of entry. And these ports of entry are typically at the unskilled level.

Because of on-the-job training and the way labor skills are acquired and sold, vocational education typically rates very poorly when subjected to the scrutiny of cost-benefit analysis. Many graduates do not get to use the skills acquired, and the lifetime earnings of vocational education graduates are not higher than that of those who do not go through vocational education.[2]

The Real Role for Vocational Education

All of this is not to say that vocational education should be scrapped as an instrument in the war on poverty. It is simply to say that vocational education's focus on the acquisition of cognitive job skills is often the wrong focus. As vocational education is currently set up, it is set up for a world that does not exist. But this is not to say that it does not have, or could not have, an important role in the world that does exist.

To make vocational education programs successful, it is necessary to ascertain where the conventional model of vocational education is correct and where it is incorrect. There are areas in the economy (typing skills, for example) where skills are typically acquired in formal training and then sold to a prospective employer. At the junior college level one could list other skills--dental hygienist, etc. These programs should be distinguished from those vocational education programs where it is traditionally difficult, if not impossible, to sell the skills that have been acquired (machinist skills, for example). In areas where skills can be sold, the name of the game is excellent teaching of the desired skills. In other areas the goal is getting vocational education graduates into the good job ladders of the economy. Skill acquisition has a role to play in accomplishing this task, but it does not dominate the game.

One aspect of the way in which the market for good jobs is structured is that individuals compete for these jobs not on their willingness to work for less (wages are generally rigid in the short run), but on their potential training costs in the job ladder for which the employer is hiring. In most occupations, there will be a queue of potential workers and the employer will seek to hire those workers with the lowest potential training costs in the sequence of jobs for which they will become eligible. If vocational education succeeds in raising the relative position of its graduates in that queue, it will have succeeded in raising their lifetime income prospects regardless of whether these graduates do or do not actually use the specific skills acquired in vocational education. The key word in the previous sentence, however, is the word "relative." Vocational education must be able to demonstrate that its graduates are better workers (i.e., have lower potential training costs) than workers who have not been through its programs.

From this perspective it is necessary to ascertain the factors that influence potential training (upgrading) costs. Given these factors, it is then necessary to design vocational education programs that either inculcate these background characteristics or allow students to demonstrate that they have the desired traits. While the desired traits will differ depending upon the training or job ladder that is the specific focus of attention, there are some general characteristics that are important in all job ladders which eventually lead to high-paying jobs.

First, the three R's (reading, writing, and arithmetic) are usually an important ingredient in training costs. Low-literacy workers can be trained, but the training costs are usually much higher. Literacy training, often a neglected value of vocational education, should be seen as one of the prime values. From this perspective the vocational aspects of vocational education are the incentive or inducement that persuades students who would not learn them in conventional college preparatory courses to learn the three R's. In order to run the lathe, the student has to learn to read the relevant specifications and perform the necessary arithmetic manipulations. Since vocational education graduates will have to compete with graduates from conventional schools for jobs, they have to persuade employers that they have literacy standards that are as high, if not higher, than the students who come from the standard educational paths.

This role is such an important one that a case can be made for either expanding or abandoning vocational education simply on the grounds of its ability to provide literacy training for a group of people who will not get such training on the conventional educational tracks. The historical record of vocational education is not good on this dimension, even after one corrects for the quality of the student inputs that have been placed in the system. But one needs to ascertain what these students could do if they were to realize that literacy training is probably the number one goal of vocational education.

The second role for vocational education is in an area for which there is no non-pejorative word--industrial discipline. During the height of the war on poverty it was a common observation of those employers who were making a good-faith effort to train disadvantaged workers that it was easy to teach cognitive job skills (how to run the machine), but next to impossible to teach good work habits (show up on time, do not cuss the boss, work hard, etc.). Since poor work habits tended to drive out good work habits, employers found that the poor work habits, if tolerated, spread to the rest of the labor force. Hence some firms even went so far as to establish what were essentially entry factories to provide a place for teaching good work habits where the teaching would not corrupt the rest of the labor force. In general this is such an expensive way to teach good work habits, or to determine who has good work habits, that few employers are willing to use it in any wholesale way. Most of the employers who had such training plants in the 1960's have in fact abandoned them as too expensive.

Industrial discipline is also one of those factors for which it is impossible to test upon entry into the work force. If you are told that you are being tested as to whether you will listen to your alarm clock, you will listen. The only way to determine whether workers do or do not have the desired characteristics is to look at their behavior in an activity where they think they are not being tested or where the activity lasts so long that basic habits overwhelm the imperative to "test out well."

Because the habits of industrial discipline are important and because they are not subject to entry testing, there is an important role for vocational education in teaching industrial discipline or in certifying that some or all of its students have it. While it is probably too strong to say that vocational education should be run like the Prussian army, it is not too strong to say that the graduates of vocational education should have learned those characteristics necessary to survive in the Prussian army before they graduate. It is exactly these characteristics that are some of the most salable "skills" in our economy.

Thus there is a three-pronged role for vocational education. (1) In some limited areas actual salable skills can be created. (2) Upon completion of vocational education, literacy standards must be as high or higher than those of students who come from academic educational tracks. (3) Upon completion of vocational education, standards of industrial discipline must be as high or higher than those of students from academic educational tracks. If these latter two conditions are not met, or cannot be met, then much of vocational education should be abandoned. It costs more than conventional education and is not delivering a superior economic product.

To Tell or Not to Tell a Lie

Unfortunately, to achieve either of the last two functions vocational education must tell what the Classical Greeks would have called a noble lie. To provide an incentive to improve literacy skills and to acquire industrial discipline students must be told that they are acquiring marketable cognitive job skills. Yet in fact they will not, in general, be able to sell their cognitive job skills. If, on the other hand, they were told the truth--i.e., that the only salable skills are literacy and industrial discipline--they would not be willing to learn the desired characteristics.

While one generation of students can be conned into believing that they are learning cognitive job skills, succeeding generations cannot. They simply have to look at what happens to their older brothers and sisters and their friends. Even if they get jobs, they are not getting jobs where their "skills" are being put to use. Therefore, students can conclude that there is no reason to learn the cognitive job skills, but if there is no reason to learn the cognitive job skills, the valuable background characteristics--literacy and industrial discipline--will not be learned either.

334

How to confront and solve this dilemma is the fundamental problem within vocational education. Unless it is solved, vocational education can have little payoff in reducing poverty.

The Necessary External Conditions

Up to this point we have been looking at the internal conditions that are necessary to make vocational education a successful instrument in reducing poverty. To be an effective instrument for reducing the handicaps of the disadvantaged, it must lower their relative potential training costs. While there are some areas where the skills acquired in formal education can be directly sold, this usually means raising relative standards of literacy and industrial discipline.

There are, however, a set of external conditions that must be met if vocational education is to be successful. Unless these conditions are met, even a perfectly run program of vocational education cannot be successful. Without these conditions vocational education is useless from a social economic perspective.

The first condition is something approaching full employment. In an economy with a 7 percent unemployment rate, one can make a good argument that all government training programs are simply a waste of money. In such an economy, there are surpluses of all types of labor, and employment is essentially a zero-sum game. If one person gets a job, another person does not. In this environment, government training programs are simply a case of what I call "punch in; push out."

Suppose a training program succeeds in placing a trainee in a job. Someone else who otherwise would have had a job now does not have a job. If one looks at the characteristics (age, race, sex, etc.) of the worker who is crowded out of employment by the government trainee, one will see that he or she has approximately the same handicaps as the one who was being helped. In the process of helping a client, the training program creates a client. The trainee benefits, but from the point of view of society there is no net gain. Unemployment and poverty remain unaffected. What the training program has done is to reshuffle unemployment and low earnings within the disadvantaged population. There would be some benefit to a program that reshuffled poverty if it reshuffled poverty between the disadvantaged population and the advantaged population, but this is unlikely to happen unless the programs are extensive enough to raise the relative credentials of all of the disadvantaged population. Simply because of the expenditures that would be required, this is unlikely to happen.

Training programs can only affect society and the overall distribution of income in a society with a surplus of jobs and a shortage of employees. If government monetary and fiscal policies are not to be used to create the necessary labor shortage, then government training programs will be a waste of money. Government employment programs have merit, but programs to train people to move into the private economy have no merit since there will be no effective private economy into which movement can occur.

Only labor shortages create an environment in which employers will seek to eliminate low-earning jobs and to create good jobs in their place. As long as there are surpluses of labor, raising the quality of the potential labor force simply induces increases in the credentials that employers demand. When enough high school graduates are available, employers shift to a "high school only" hiring rule. If enough college graduates were to become available they would shift to a "college only" hiring rule. By doing so employers, on average, increase the quality--i.e., lower the potential training costs--of their labor force without additional expense.

Thus an increase in the labor force credentials creates an equivalent increase in the demand for labor force credentials. But even in this situation vocational education could play a role, if not in reducing poverty, at least in reshuffling it if it were not for another fact of life. The supply of labor force credentials by the advantaged portion of the labor force is not independent of the supply of labor force credentials by the disadvantaged portion of the labor force. The advantaged portion of the population knows that it is playing a zero-sum relative game. If I want to hold my current position and you increase your credentials, I must in response increase mine. When you move from high school dropout to high school graduate, I move from high school graduate to college graduate. In the process you end up with a high school degree and I end up with a college degree, but we both end up with exactly the same jobs we would have had if neither of us had acquired the extra credentials.

As a result it is difficult, if not impossible, for vocational education or other training programs to raise the relative credentials of disadvantaged groups. To do so it would be necessary to place a limit on the credentials that could be acquired by the advantaged portion of the population. Since the advantaged are also a majority, this is extremely unlikely to occur.

As a result, full employment or overly full employment is an absolute precondition to successful vocational education programs for the disadvantaged. Without full employment vocational education cannot reduce poverty. Relative credentials might not change during a period of full employment, but employers have an incentive to redesign jobs and make them more attractive since they are facing a labor shortage. In a period of full employment, relative credentials become less important and absolute credentials become more important. The zero-sum nature of the game gradually changes into a positive-sum game where every economic winner is not counterbalanced by an economic loser.

Supply Side Versus Demand Side Strategies

While any total strategy to eliminate poverty would have some human investment programs as one part of that strategy, human investment programs do not by themselves constitute a strategy for eliminating poverty. If one thinks of the labor market as a set of exogenously given supply and demand curves, it is in principle possible to create any distribution of earnings by operating in the supply side of the market. But in practice this is not possible for a number of reasons.

First, supply curves are not independent of each other. To raise the training of the disadvantaged is to generate an increase in the training of the advantaged. Second, supply and demand curves are not independent of one another. To raise the supply of college degrees is to increase the number of labor markets in which a college degree is required as a prerequisite. Finally, since laboring skills are mostly acquired on the job, the supply curve is often a function of the demand curve. When job openings exist, skills are taught. When job openings do not exist, skills are not taught.

As a result of these three interdependencies, any strategy to reduce poverty must operate on the demand side of the market as well as on the supply side. As has been said, one strategy for operating on the demand side of the market is to create full employment. Macroeconomic policies are used to alter the nature of labor demands. Another strategy is some form of "affirmative action." In this strategy, government orders replace the full-employment desire for maximum profits as the incentive for altering relative labor demands.

The affirmative action strategy, however, is the paradigm case of a zero-sum game. Poverty is not to be reduced but to be reshuffled between advantaged groups and disadvantaged groups. Even if the program is successful in reshuffling between groups, it is unlikely to be successful at the individual level. Within the advantaged group there are obviously disadvantaged individuals just as within the disadvantaged group there are obviously advantaged individuals. In any affirmative action the actual reshuffling is apt to be between the disadvantaged among the advantaged and the advantaged among the disadvantaged, and not a replacement of the advantaged by the disadvantaged. As a result the affirmative-action demand side strategy is apt to be much less successful than the full-employment demand side strategy. Effective affirmative action programs are also highly unlikely to be put in place in a high-unemployment society. The zero-sum nature of the programs is too direct in a world where a person placed is some other person thrown out of work.

The third demand side strategy is government employment. In this case the government seeks to alter the structure of labor demands by directly creating demands for labor. If government tilts its employment toward disadvantaged groups, it can alter the overall demand curves for labor. While this is an eminently logical strategy for raising the earnings of the disadvantaged, it requires a government employment program substantially different from that now being constructed in the U.S.

First, for many people the jobs are not going to be temporary short-term jobs occupied until the individuals get into private employment. Since there are not enough private jobs to go around, many of the employees are going to be long-term employees. Second, if the jobs are to have an impact on poverty, they must have a wage structure in which many of the wages are substantially above the minimum wage. Given a minimum wage of $2.30 per hour, 2000 hours of work per year, and one earner, earnings are still substantially below the poverty line for a family of four. Third, if the jobs are to eliminate the gap between the advantaged and the disadvantaged they cannot be or seem to be second-class jobs. This means the jobs have to be organized with chances for advancement and promotion, and with a real product being produced. Using language that is slightly pejorative in the American context, the government must set up a socialized sector of production whose main task is to guarantee employment to low-income workers. Given the number of such workers, the cost of such a sector would be considerable.

The final demand side strategy is a variant on the full employment strategy. Those who advocate high unemployment do so partly because they believe that efforts to stimulate the economy would simply produce labor shortages among adult white males. Given the resultant labor shortages, inflation would break out in the wages of adult white males and then spread across the economy. While this argument is not valid at a 7 percent unemployment rate, it does become a valid argument if unemployment is reduced below 5 to 5-1/2 percent.

The solution to the problem, however, is not to keep unemployment rates permanently above 5-1/2 percent, but to find techniques for reshuffling unemployment toward adult white males. If this could be done, monetary and fiscal policies could provide more stimulus and lower national unemployment rates without creating shortages of adult white male workers and hence inflation.

Wage subsidies are the standard market technique for redistributing unemployment. If a wage subsidy were offered for the employment of youth, for example, employers would alter their employment demands to hire more young people and fewer adults. If private employers changed their demands for labor of different ages, then government macroeconomic policies could be used to stimulate aggregate demand and increase total employment for both young people and adults.

It should be clearly understood that a general wage subsidy for youth is not the same thing as a reduction in the minimum wage for youth. Reducing youth minimum wages increases some employers' incentive to hire young people, but it reduces youth's incentive to work (they get less). With a wage subsidy the work incentive for youth is maintained. But even more important, a wage subsidy is a general device which encourages all employers to hire more of the workers who are eligible for the subsidy. Reducing the legal minimum wage only increases employment desires for those employers who actually hire people at the legal minimum wage.

Part of the reason that the minimum wage does not have more of an effect than it does have is that most employers--and practically all large employers--have *de facto* minimum wages which are far above the legal minimum wage. These private minimum wages may be negotiated in labor union contracts or be a competitive necessity to get the quality of labor the employer desires. A lower legal minimum wage simply would not make any difference to most employers--and all of the best employers. In contrast, a wage subsidy encourages everyone to hire more young people. A general wage subsidy rather than a lower legal minimum wage also gets around the argument that the program is really being run for the benefit of the low-wage non-union employer who provides little or no training and few lifetime career opportunities.

With a wage subsidy program it is possible substantially to reshuffle unemployment. In a country like Japan where young workers are cheap relative to older workers, unemployment is concentrated among those 55 to 65 years of age and not among the young. There is nothing intrinsic that says unemployment must be concentrated among the young. And with a different wage structure it would not be concentrated among the young.

There are, however, objections. One springs from the observation that to lower the relative cost of younger workers vis-a-vis older workers is not to reduce unemployment, but to transfer unemployment from the young to those who are older. It is this transfer that lies at the heart of the labor movement's objections to wage subsidies for young adults. Sons and daughters take the jobs of fathers and mothers.

But it is exactly this reshuffling of unemployment that is desired from the point of view of the economy. If unemployment differentials could be reduced using wage subsidies, some of the inflationary pressures that now afflict our economy as it moves toward capacity would be removed. The policy pays off not in terms of directly increasing employment, but in terms of reducing inflationary pressures and allowing monetary and fiscal policies to be used to reduce unemployment for everyone. As a result, a wage subsidy can be supported even though it causes no direct reduction in unemployment.

Private wage subsidy proposals suffer from one other fundamental objection. Normally, government programs start small and then, if successful, are expanded. But one of the peculiarities of a wage subsidy is that no small-scale program can be successful. To start small, a wage subsidy must be restricted to something less than the total supply of young workers. The usual suggestions are to limit eligibility to those who come from poverty families and who have been unemployed for long periods of time. But any system of limited eligibility simply reshuffles unemployment among young adults with no enhancement of their job prospects vis-a-vis adults and hence no reductions in inflationary pressures. Employers hire those youths eligible for benefits and refuse to hire those youths not eligible for benefits.

The within-group reshuffling problem also has a large impact on the relative costs of private versus public employment. Wage subsidies would seem to have a cost advantage over direct public employment. To pay some fraction of a young person's wages (say 10 percent) would seem to be cheaper than paying 100 percent of his or her wages in a direct public employment program. But this is only true if both programs are universally available to all youths. Regardless of the legal subsidy per employee, the costs per extra youth hired are apt to be very large in a wage subsidy if the program mainly reshuffles employment among the young. Limited programs simply end up paying for those who would have been hired anyway, with no net increase [illegible] employment. Paradoxically, if one is only willing to fund a small program it is cheaper per extra person hired to hire people directly and pay 100 percent of their employment cost than to subsidize private employment and pay only part of their salary. Conversely, if one were going to hire all young people, the opposite would be true: The wage subsidy is cheaper than direct public employment.

When one reviews the four demand side strategies, they all have what some would consider unacceptable costs. Full employment is opposed on the grounds that it is not compatible with price stability. Affirmative action is opposed on the grounds that it is reverse discrimination and inefficient (does not allocate jobs to those with the lowest training costs). Government employment is opposed on the grounds that it is too costly or is back-door socialism. Wage subsidies are fought on the grounds that they only reshuffle misery and that they are expensive. The real question, however, is how to pick the least objectionable option. Unless one of the four is picked, it is not possible to alter labor market earnings no matter how extensive the policy of human capital investment.

Productivity and Vocational Education

Interestingly, the first national interest in manpower training programs sprang not from an interest in poverty or minority groups, but from an interest in stimulating economic growth. In particular, the first programs were adopted as part of our national strategy for staying ahead of the Russians economically in the late 1950's. As one might expect, however, the role of vocational education is quite different in a poverty strategy as opposed to a strategy for accelerating productivity and growth. In a poverty strategy, manpower training programs focus on those who have low earning abilities. In a growth strategy, manpower training programs focus on those whose skills can be most easily upgraded regardless of whether they currently have low or high earnings.

But here again manpower training must confront the fact that most skills are learned in an informal process of on-the-job training and upgrading rather than in formal education and training. Vocational education is relevant to the extent that it makes this training less costly, but this will in general mean creating the right kind of background characteristics (literacy, good work habits, etc.) rather than in creating the cognitive job skills themselves. To be useful beyond this point, vocational education would have to be very closely linked to the work place so that it could provide that part of the instruction process that can only be inefficiently provided in the work place and leave out that part of instruction that can be provided efficiently in the work place.

While there are probably slight improvements that could be made in the efficiency with which workers learn skills, the real bottlenecks in productivity are not in the process of skill acquisition. The real bottlenecks lie in our willingness to accept new higher-productivity processes that make old skills and processes obsolete and in the speed with which we eliminate low-productivity activities from the economy. Both

310

of these sources of productivity growth have something in common--they lead to substantial reductions in real incomes for someone in the economy and are hence resisted with all of the accumulated political and economic muscle of the groups involved. The U.S. rate of growth of productivity is below the average of other industrialized countries partly because we have been less successful at getting out of obsolete low-productivity industries (textiles, shoes, etc.) and more resistant to using the newest labor-saving technologies (ships, steel, etc.).

To raise the rate of growth of productivity we have to become more efficient at eliminating or reducing the real economic losses that occur when productivity advances. This means eliminating long periods of unemployment and the net destruction of skills when productivity changes occur. The relevant question is the extent to which vocational education can play a role in speeding up the process of adjustment and reducing associated economic losses.

Obviously, the problem of alternative employment is one that is outside the competence or purview of vocational education. But what about the process of creating new skills when old skills are made obsolete? Here again the existence of on-the-job training becomes relevant. Vocational education is not the place to create the new job skills, but it may be the place to give older workers the background characteristics that are necessary to learn new skills. Many skilled older workers do not have the literacy skills necessary to create new skills. Perhaps they can most usefully learn the necessary background skills in an educational environment that seems more job-related than that of the conventional academic educational institution.

Summary

Because skills are not in fact exogenously acquired in formal education and training and then sold in an auction-type labor market, there is a limited role for vocational education in an anti-poverty campaign. The prime purpose of vocational education must be creating those background characteristics--high levels of literacy and good work habits--that make an individual worker a low-cost trainee. If vocational education succeeds in raising the relative position of its clients, it will succeed in getting them on the good job ladders of the economy and hence on the road to good lifetime earnings.

Improving the relative background characteristics of disadvantaged workers is, however, almost impossible since any improvement in their characteristics tends to induce increases in the quality of the background characteristics of the advantaged population. As a result, realistically, vocational education can only play an anti-poverty role in a world of full employment (with or without wage subsidies). In an economy with high unemployment, background characteristics are a zero-sum game in which only relative credentials count. When one person gets a job, someone else does not get a job since the basic problem is a lack of jobs. In an economy with a labor shortage, background characteristics are a positive-sum game in which absolute qualities begin to count for more than relative qualities. Given that workers' background characistics are high enough, employers will respond to labor shortages by upgrading employment and eliminating low-productivity employment. When one person is employed, another is not unemployed. One person's wage gain is not another person's wage reduction.

As a result, to some considerable extent the success or failure of vocational education depends upon the existence or nonexistence of a fully employed economy. From a social perspective, but not an individual perspective, vocational education is a waste of resources in an underemployed economy.

The other demand side strategies (affirmative action and government employment) create a role for vocational education, but it is a slightly different role. Depending upon the industries that the government intends to set up to provide employment, vocational education might be geared up to provide some of the necessary skills. But in government employment as well as private employment, on-the-job training is apt to prove preferable. In the affirmative action strategy, vocational education could play a role in providing the needed background characteristics for those members of disadvantaged groups who do not have them. As I mentioned, however, neither of these two strategies is likely to be adopted.

In terms of accelerating productivity, I see very little role for vocational education. The real limits to productivity growth spring not from an inefficient process of skill acquisition but from opposition to productivity improvements (new processes or the elimination of old processes) on the grounds that large economic losses are imposed. The only way to reduce these losses is quickly to find new jobs for those who are displaced. Vocational education may have a subsidiary role to play in providing background characteristics for older workers who do not have the desired background characteristics, but it is not a solution to the problem by itself.

In the end vocational education must be judged on two grounds. First, in those cases where skills are acquired exogenously and then sold to employers, is it good at creating the desired skills? Second, are there a group of people who will not acquire the desired literacy and work habits in an academic environment but will acquire the desired habits in a vocational education environment? To a great extent vocational education stands or falls based on its ability successfully to answer the second question.

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* U. S. GOVERNMENT PRINTING OFFICE : 1979 626-113/1519